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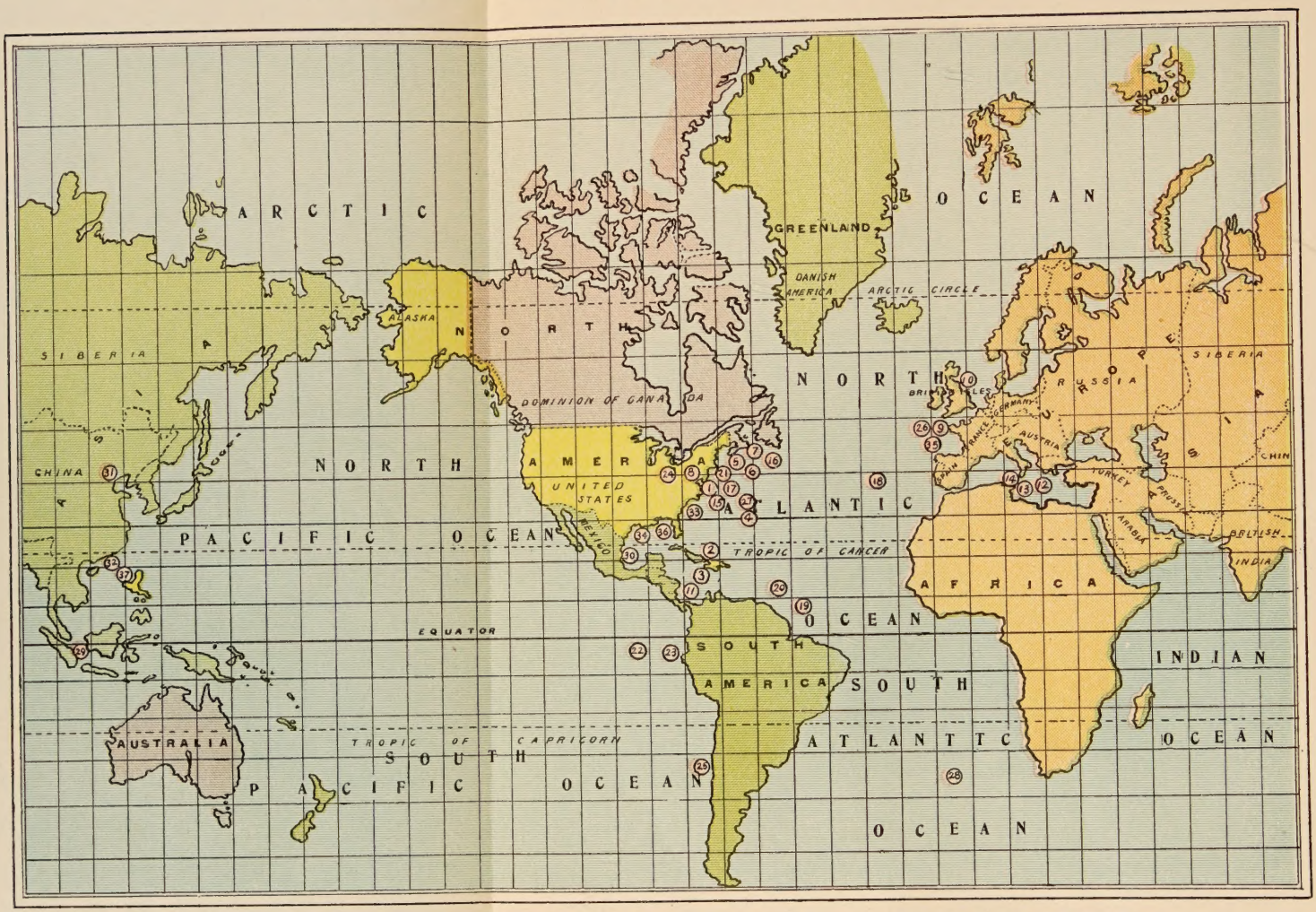
HOW AMERICAN SHIPS HAVE FOUGHT AROUND THE WORLD.



1—BRITISH SHIP GASPE SUNK OFF PROVIDENCE, R. I., JUNE 17, 1772.

2—BRITISH BRIG RACEHORSE CAPTURED OFF PORTO RICO, JULY 6, 1776.

3—BATTLE BETWEEN AMERICAN BRIG REPRISAL AND BRITISH SLOOP SHARK, OFF MARTINIQUE, SUMMER OF 1776.

4—PAUL JONES ON AMERICAN BRIG PROVIDENCE FOUGHT BRITISH FLEET OF 5 VESSELS OFF BERMUDAS, SEPT. 1, 1776.

5—PAUL JONES OFF NOVA SCOTIA, SEPT. 1776.

6—PAUL JONES OFF NOVA SCOTIA, SEPT. 22, 1776.

7—PAUL JONES OFF CAPE BRETON, NOV. 2, 1776.

8—BATTLE OF LAKE CHAMPLAIN, OCTOBER, 1776.

9—AMERICAN BRIG LEXINGTON CAPTURED IN ENGLISH CHANNEL, SEPT. 20, 1777.

10—PAUL JONES ON THE BON HOMME RICHARD DEFEATS BRITISH BRIG SERAPIS OFF SCARBOROUGH, ENG., SEPT. 23, 1779.

11—CONSTITUTION CAPTURED FRENCH FRIGATE INSURGENT OFF ST. KITT'S, FEB. 9, 1799.

12—ENTERPRISE CAPTURED BARBARY PIRATE TRIPOLI OFF ISLAND OF MALTA, AUG. 1, 1801.

13—PHILADELPHIA CAPTURED BARBARY PIRATE OFF TRIPOLI, OCT. 31, 1803.

14—DECATUR DEFEATS BARBARY PIRATES OFF SYRACUSE, ISLAND OF SICILY, DEC. 23, 1803.

15—AMERICAN SHIP CHESAPEAKE FIGHTS BRITISH 50-GUN SHIP LEOPARD OFF NORFOLK, VA., JUNE 22, 1807.

16—CONSTITUTION SUNK THE GUERRIERE OFF GULF OF ST. LAWRENCE, AUG. 19, 1817.

17—WASP CAPTURED BRITISH SLOOP FROLIC OFF CAPE HATTERAS, OCT. 18, 1812.

18—UNIED STATES FIGHTS BRITISH SHIP MACEDONIAN BETWEEN AZORES AND CANARIES, OCT. 25, 1812.

19—CONSTITUTION SUNK BRITISH SHIP JAVA OFF COAST OF BRAZIL, DEC. 29, 1812.

20—HORNET WHIPPED BRITISH SHIP PEACOCK OFF COAST OF SOUTH AMERICA, FEB. 24, 1813.

21—CHESAPEAKE SUNK BY BRITISH SHIP SHANNON, OFF BOSTON, JUNE 1, 1813.

22—ESSEX CAPTURES BRITISH PRIZE OFF GALAPAGAS ISLAND, APRIL 29, 1813.

23—ESSEX CAPTURES BRITISH PRIZES IN GUYAQUIL BAY, JUNE 19, 1813.

24—BATTLE OF LAKE ERIE, SEPT. 10, 1813.

25—ESSEX SUNK OFF VALPARAISO, CHILE, MARCH 28, 1814.

26—WASP CAPTURED BRITISH SHIP REINDEER IN ENTRANCE TO ENGLISH CHANNEL, JUNE 28, 1814.

27—PRESIDENT CAPTURED OFF JERSEY COAST, JAN. 16, 1815.

28—AMERICAN SHIP HORNET CAPTURED BRITISH SHIP PENGUIN, OFF TRISTAN D'ACUNHA, MARCH 23, 1815.

29—AMERICAN SHIP FRIENDSHIP CAPTURED BY NATIVE PIRATES OFF COAST OF SUMATRA, FEB. 7, 1831; NATIVES PUNISHED IN 1838.

30—BOMBARDMENT OF VERA CRUZ, OCTOBER, 1346.

31—BOMBARDMENT OF PEIHO RIVER FORTS, JULY 29, 1856.

32—BOMBARDMENT OF CANTON FORTS, NOV. 15, 1856.

33—CONFEDERATE MERRIMAC SUNK U. S. FRIGATE CUMBERLAND IN HAMPTON ROADS, MARCH 8, 1862. . BATTLE BETWEEN MERRIMAC AND MONITOR, MARCH 9, 1862.

34—BATTLE OF NEW ORLEANS, APRIL 24, 1862.

35—KEARSARGE SUNK THE ALABAMA OFF CHERBOURG, FRANCE, JUNE 19, 1864.

36—BATTLE OF MOBILE, AUG. 5, 1864.

37—BATTLE OF MANILA, MAY 1, 1898.

The MAKING OF AMERICA

Editorial Edition
limited to one thousand copies
of which this is No. _____

Robert Marion La Follette
Editor-in-Chief

William M. Handy
Charles Higgins
Managing Editors

VOL. IX

Army and Navy

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THE UNITED STATES ARMY AND ITS COMMANDERS.

BY NELSON A. MILES.

[Nelson A. Miles, lieutenant general U. S. A., retired; born Westminster, Mass., August 8, 1839; entered the army as a volunteer in 1861, grade by grade attaining the rank of major-general of volunteers; at twenty five commanded an army corps; at the close of the civil war he entered the regular army, where he rose to be major general, succeeding to command of the United States army October 5, 1895; conducted several campaigns against hostile tribes of Indians on the western frontier; commander of the army during the war with Spain in 1898; raised to rank of lieutenant general June 6, 1900; retired August 8, 1903. Author: Military Europe, Observations Abroad; Personal Recollections, etc.]

It is an inspiring thought that the commanders of the American Army in the past, who, by their achievements, have placed their names in the front rank of illustrious men, were scrupulously honest, both in their private life and public character. Washington, the best rounded patriot soldier and statesman that ever walked the earth, the embodiment of the grandest and loftiest traits of character, did not hesitate to say: "I hold the maxim no less applicable to public than to private affairs, that honesty is always the best policy." His whole life, public and private, was an exemplification of his firm belief in that maxim. In his Farewell Address he laid down as one of the prime rules for national guidance the injunction: "Observe good faith and justice toward all nations."

Of Washington it has been aptly said that, having no views which required concealment, his real and his avowed motives were identical; and his whole correspondence does not furnish a single clause from which even an enemy could infer that he was capable under any circumstances of stooping to duplicity. His purposes were always upright, and his means always pure. Among other elements of his success, especially as a military chieftain, were his early training and experience in engineering, a magnificent physique, abounding with vitality and the spirit of enterprise, and

a familiarity with camp life among the wild Indians of the virgin forests, fields and mountains. By his early communion with nature in her solitudes he acquired or strengthened the will to do and to dare; and to the knowledge there gained he added the good fortune of being in a position to equip himself with knowledge derived from study and the refining influences of the best social advantages of his age and generation.

It was therefore no accident, but his recognized fitness, which placed him in the supreme leadership of the armies of the infant republic that had risen to assert its independence of the mighty British Empire—the empire which, during the centuries of its colonial growth, had never lost a colony. In the position to which Washington was called, and which he accepted fearlessly, he knew well that if he ailed of success he must pay the penalty of his life. By his wisdom, sagacity and sterling integrity—by his determination, and at the same time through his candor, he inspired the confidence of his officers and men, as well as of all his fellow countrymen, and thus molded and controlled public sentiment through adversity and disaster and gloom to final success.

Yet, with it all, no man was ever more a mark for the shafts of envy, jealousy and malice than was Washington. No one was ever more severely criticised, reviled and vilified than was he. However, the attacks of his enemies, as poisoned darts upon the bright armor of truth, fell harmless from the character with which his whole life was mailed. The splendid gallantry of his acts in battle, the wise, judicious strategy and generalship displayed in his campaigns, and the noble principles of justice, integrity and honor that characterized all his official acts have been the chart, the compass, the beacon light of the American Army for a hundred years.

From the time that Washington, on the 19th of December, 1783, resigned his commission to congress, until he was again called to the command, July 3d, 1798, there were four commanders of the United States Army—Harmer, St. Clair, Wayne and Wilkinson. The first named assumed

command in the September succeeding the inauguration of our first president under the constitution, in 1789. Harmer was succeeded March 4th, 1791, by Arthur St. Clair.

General St. Clair had served with distinction at Louisburg and Quebec, and performed other services in the French and Indian wars, as well as throughout the war of the Revolution. He had been president of congress and governor of the northwest territory. But while in command of the army, in 1791, he was badly defeated in battle with the Indians near the Miami villages, and soon thereafter resigned his command.

He was succeeded March 5th, 1792, by Major General Wayne, or "Mad Anthony," as he was affectionately styled by his soldiers, because of the ardor he had displayed in battle. It was he who carried Stony Point about the middle of July, 1779, in a night assault with bayonets alone without firing a single gun, and, in the midst of the heat of the assault, falling wounded, exclaimed: Forward, my brave fellows, forward! —then in a low tone to the aides who had hastily gathered about him: "Assist me: if mortally wounded I will die in the fort." It was first feared that the impetuosity of the commander in chief would render him unfit to cope with a foe remarkable for caution; but the skill and bravery with which he fought and triumphed over the Indians very soon vindicated the wisdom of his selection by Washington.

Upon the death of General Wayne, he was succeeded by General James Wilkinson, December 15th, 1796. Wilkinson was known as a politican rather than a soldier. He had, however, been made conspicuous by having had command of Wayne's right wing at the victory of Maumee.

When the war with France seemed inevitable, in 1798, George Washington was called a second time as general in chief to the command of the army of the United States. After the death of Washington, Alexander Hamilton was for a brief period the senior officer of the army. Wilkinson was the next senior officer of the army, from June 15th, 1800, until January 27th, 1812, when he was superseded by General Dearborn.

During the war of 1812-1815, the secretary of war assumed direct control of military matters, and at one time established his headquarters at Sackett's Harbor, N. Y. It was during

this time that disaster and serious misfortune befell the nation. The capitol at Washington was captured, sacked and burned, and Canada was lost to our republic, possibly forever. Jackson's brilliant achievements, with the minimum loss of life, went far to retrieve the failures of others. Long after the war was over, the secretary of war explained his conduct by saying that from the lateness of the season, the inclemency of the weather and the continued indisposition of the commanding general, he had expected that the campaign would end as it did "with the disgrace of doing nothing." The spectacle of the secretary of war hastening to the frontier, planning an expedition which he knew must fail, yet collecting troops and stores at an immense cost, and sending forth his generals with assurances that he believed they would succeed, was humiliating enough; but what followed was so much more so, that we may decline to pursue the subject further.

General Wilkinson disconnected himself from the army and went to Mexico, where he died December 28th, 1825. General Henry Dearborn, who succeeded Wilkinson as senior major general of the army, appears to have been unfortunate as a commander. General Jacob Brown assumed command June 21st, 1821, and retained it until his death, February 24th, 1828. Brown was of Quaker parentage, born in Bucks county, Pennsylvania. He received his education in the public schools, and at the age of eighteen became a public school teacher himself, first in his native state, then in New Jersey, then in New York. With his savings he purchased some government land in the northwestern part of the state of New York, and proceeded to improve it. When the war with England broke out in 1812, and New York state was threatened with invasion from across the Canadian border, Brown was appointed to the command of a body of the state militia of that section. His career illustrates the fact that, however beneficial and advantageous a regular military education may be, the true soldier is born, not made by such education. Brown's career was so brilliant that the government of the United States tendered him a command, first with the rank of colonel in the regular army, which he declined; later with that of brigadier, and finally with that of major general, which he was induced to accept. To great

personal bravery he united a moral courage comparable to that of Washington, and a firmness and decision of character that left no room for doubt as to his aims and his views concerning any question upon which he was entitled to express himself. His order on assuming command of the army was a production worthy to stand with Washington's farewell address, and a few sentences therefrom may be appropriately quoted:

"The state of the military establishment is of a nature to excite a deep concern for its interests. The minute divisions which it has suffered, from the necessity of furnishing garrisons for the numerous posts that line our inland and maritime borders, and the abridgment of the sources of competition, inseparable from its dispersed condition, are alike unfavorable to its discipline. The principle of emulation, which, in combined forces, has an irresistible operation by a force inherent in itself, is lost upon bodies which do not feel the influence of contact, and can find a substitute only in the increased devotion of those who are invested with command. Discipline, no longer nourished by a principle of constitutional activity, becomes in a great degree dependent for existence on the application of authority by those in command, and on the principle of obedience in those of subordinate situations. . . . Subordination in authority is the essence of military government, and it must be fostered by that respectful deference which is due from all officers to each other, in their private as well as in their official correspondence.

"The major general feels it his duty forcibly to enjoin on the officers of the army the necessity of maintaining a spirit of harmony among themselves. In addition to the consideration that personal schisms tend directly to the subversion of military order and discipline, it will be obvious to them that their profession imposes obligations which do not exist in the other walks of life. Dissensions and controversies among private gentlemen affect only the characters of the individual parties, while those among military officers impair the reputation of the body of which they are members; and it is but just to expect that every gentleman of honorable sentiments will sacrifice the gratification of his personal enmity to the consideration

that the reputation of his associates will necessarily be involved in the obloquy which he draws upon his own.

"The officer is the depository of the rights of the soldier, and the obligations of his office, as well as the laws of honor and humanity, claim a faithful execution of the trust. When the soldier ceases to regard the officer as his protector, the authority with which the laws invest the latter loses its efficacy in his estimation. The surest remedy for the evil of desertion is contained in a rigid and steady discipline; to be salutary it must possess both these qualities, but no violation of law can be deemed essential to its enforcement. Its effect upon the soldier becomes impaired the moment he feels that the system which governs him is fluctuating in its course, or that it violates the principles upon which it is founded. The certainty of laws constitute their principal efficacy, and however severe restrictions may be they are obeyed so long as they are dispensed by the hand of justice and not of oppression.

"The nation must be convinced that the army is progressing in all useful improvements, and must be made to feel that it is connected with its safety and honor. It is in vain that officers complain of the difficulty of this achievement; it is called for by the highest duties enjoined by patriotism, and it must be effected, as they value their own reputation and the consciousness of having performed their duty.

"The efficacy of example is too generally felt to be asserted, and to officers of rank the major general looks for constant exhibitions of zeal and attention to their profession. If they perform their duty he cannot doubt, confiding as he does in the work and talent of the junior grades, that the army will be distinguished for its devotion to the institutions of the country, and a model of order and excellence in the military profession."

Three months after the death of General Brown, Major General Alexander Macomb succeeded to the command of the army. His was an interesting career. Born at Detroit April 3d, 1782, he was educated in Newark, New Jersey. At the age of sixteen he enlisted in the New York rangers, a select company, which in 1798 volunteered for the threatened war with France. That war failing to materialize, he obtained a commission the following year as cornet in the United States army.

When the corps of engineers was established he became a member of it, with the rank of lieutenant, being made a captain in 1805 and major in 1808. He continued to advance in rank until, in 1812, he had reached the command of the third artillery, with the rank of colonel. He distinguished himself at Niagara and Fort George in 1813, and in January, 1814, was made brigadier general and charged with the defense of the country bordering on Lake Champlain. With a force of about 1,500 regular troops and a few detachments of militia, brought in from the surrounding neighborhood, he took station at Plattsburg and awaited the attack of the British commander at the head of a force of 14,000 veterans of the British army. At the same time, Commodore McDonough, with the squadron under his command, took up a position before that town and awaited the attack of a naval force of the enemy very much superior to his own in number of vessels, men and weight of metal. When the shock of battle came, the enemy's land forces suspended operations in the very act of engaging, appearing to await, in a measure, the outcome of the sanguinary contest that they saw being fought to a finish on the water; and when that contest ended in the total overthrow, almost annihilation, of the British squadron, the British land forces, overwhelming as they were in numbers, beat a hasty retreat. It was one of the most wonderful victories, if not the most wonderful, in our history, and in the public mind Macomb was bound to share the honors of it, in a measure, with the heroic McDonough. The president advanced Macomb to the rank of major general, dating the commission from the day of that great victory, September 11th. At the conclusion of the war General Macomb was stationed at his native town, and given command of the northwest frontier. In 1821 he was called to Washington as chief of the corps of engineers, and after the death of General Brown became commander in chief of the army, which position he retained until his death, on the 25th of June, 1841.

Macomb was immediately succeeded in the command of the United States army by General Winfield Scott, whose birthplace was that town in Virginia which, in his old age, became the scene of the grand climateric of the Civil war in which his very dear personal friend and long time chief of staff (Lee)

was forced to yield to a newly risen chieftain (Grant), to whom General Scott sent a message as "from the oldest general in the world, to the greatest."

The hero of Lundy's Lane and of Mexico had had the advantages of an excellent education, had been admitted to the bar in Petersburg, in 1806, and while a member of the bar had been present at the trial of Aaron Burr for treason. Two years after his admission to the bar Scott entered the army, receiving a commission as captain of artillery. He was a born soldier, and soon became thoroughly familiar with the details of the military art through assiduous study. At the breaking out of the war of 1812 he was commissioned lieutenant colonel of the second artillery, and ordered to the border on the lakes. At the battle of Queenstown he was made prisoner, after exhibiting marked gallantry and soldierly conduct. Carried as prisoner to Quebec, he was there paroled, and on reaching Washington, January 13th, 1813, he learned that he had already been exchanged, and soon reported again for duty on the northern border, having been promoted to the rank of colonel and adjutant general, serving in the latter capacity on the staff of General Dearborn, at the same time retaining command of his regiment. In the capture of Fort George, May 27th, he commanded the advance and conducted himself with notable skill and bravery, being first within the captured work and personally hauling down the British colors. A magazine explosion followed, in which he was severely wounded, but soon recovered sufficiently to take an equally conspicuous part in the battle of Chippewa, July 5th, in which he led a bayonet charge on the right wing of the army, furnishing one of the very few recorded instances where the bayonet was not only fixed but liberally used. It was, however, at Lundy's Lane that he won his brightest laurels, receiving another wound. For his gallant conduct here, where two horses were shot under him, and at Niagara Heights, he was brevetted a major general, and voted the special thanks of congress with a gold medal. His participation in the pitched battles of the war with England closed when he fell insensible on the Heights of Niagara, but he was given active duty with an important command, headquarters at Baltimore, as soon as he recovered.

Passing over a long period of active and useful service to his country, we find General Scott landing, March 9th, 1847, with an army of invasion near Vera Cruz, Mexico, which city he speedily reduced to submission, along with its powerful castle of San Juan D'Ulloa. How, waiting only for reinforcements and supplies, he pressed forward into the enemy's country on his memorable march, fighting his entire way against superior numbers having every advantage of position, until crowned with the victor's laurels in the ancient halls of the Montezumas, I have not the space here to recount. Nor is it possible to touch upon other than the military features of his character. Enough that he was universally recognized as a military genius of high order, and that in the hour of the nation's supreme peril this great Virginian stood by the starry flag and continued to hold it aloft and defend it against all assailants. Then and there he stood firm as the rock of Gibraltar, when so many of his comrades were in doubt and undecided, and with a serene courage that never shone brighter, made the inauguration of Abraham Lincoln at the national capital not only a possibility but an accomplished and glorious fact. His stern immovability, when duty required firmness, recalled to the lovers of his country the splendor of his former deeds. He protected the national capital, and inspired the manly youth of the country with a renewed and strong spirit of patriotism, which found expression in the mightiest uprising in the defense of liberal government that the world has ever yet beheld. All honor to the grim old warrior, whose life and deeds coupled the peerless Lincoln with Washington, the embodiment of greatness, illustrious over all!

McClellan, who succeeded Scott in command, had long been a favorite of the latter, as well as of the army and the country. He was highly educated and accomplished in the theory of war, and his successes in western Virginia at the outset of the rebellion seemed to mark him out as a great leader. Practically, as well as theoretically, his experience and ability found their fullest scope in the organization of the great army.

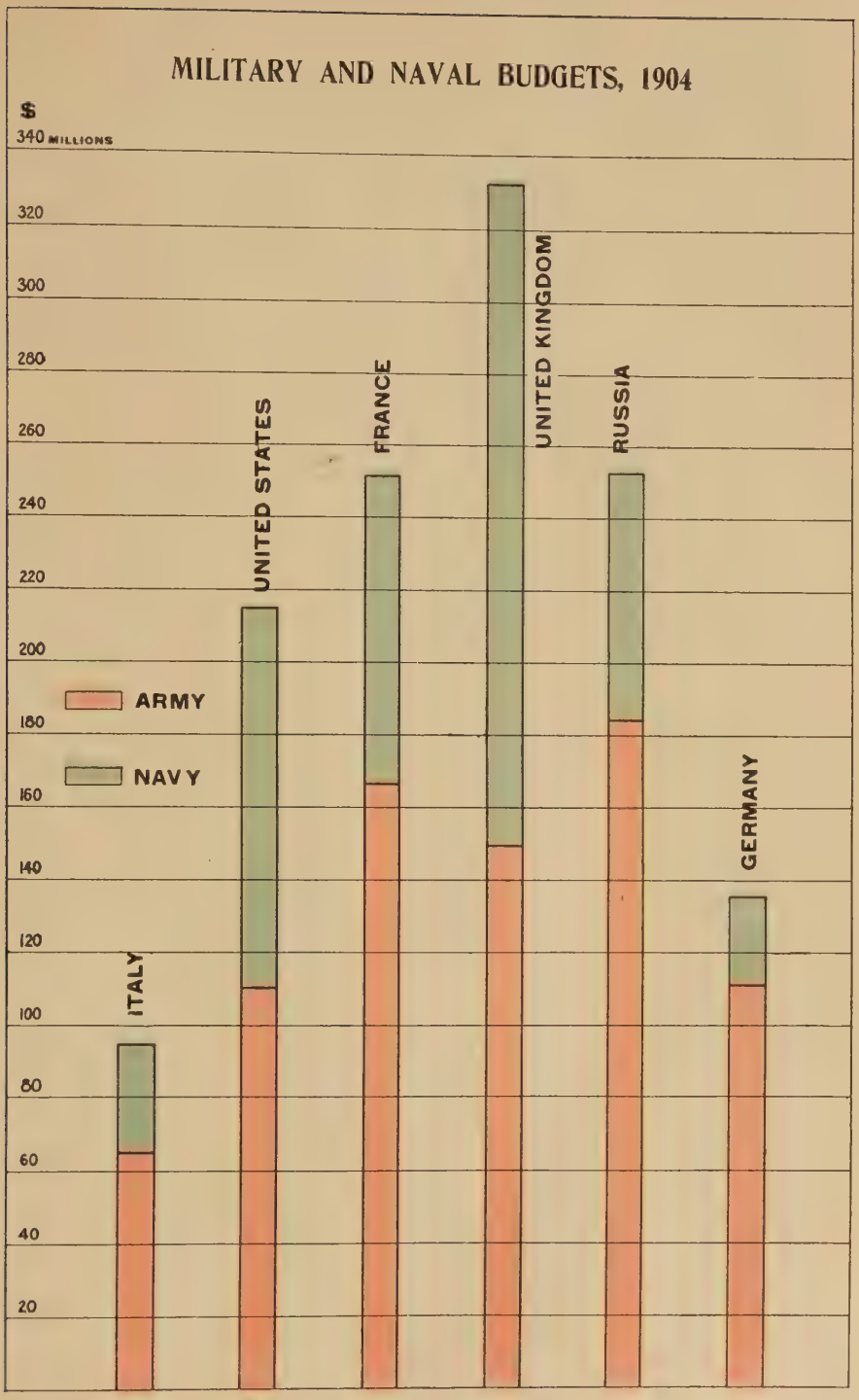
McClellan was followed, in July 1862, by General H. W. Halleck, who had made himself an authority on military matters by his contributions to military literature. He did not,

however, exercise personal command in the field, and it was during his time that Major General Meade, in command of the army of the Potomac, fought and won the great battle of Gettysburg, which was the Waterloo of the confederate cause.

Grant followed Halleck in command of the army. There had been so much interference by non-military men with important military affairs that President Lincoln very wisely determined to give General Grant proper control of the military operations, and leave him unembarrassed in the discharge of those duties with the grave responsibilities involved. Grant's tireless energy and relentless tenacity, rather than any special tactical or strategic ability, gave full effect to the power of the mighty veteran armies of the republic at that time.

General Grant was succeeded in command of the United States armies by that brilliant leader, peerless strategist and versatile writer and genius, William Tecumseh Sherman. Sherman had distinguished himself at Shiloh, Vicksburg and Chattanooga, besides performing innumerable services of less note. Grant had selected him for the most important command outside of his own in the final year of the war, and in due time Sherman electrified the nation with the message: "Atlanta is ours, and fairly won." He then divided his forces, giving to the "Rock of Chickamauga," George H. Thomas, the most difficult task of outmaneuvering his enterprising enemy, Lieutenant General Hood. Thomas gathered the detached forces of the army, and by skillful maneuvers and superb, grand tactics, utterly destroyed and routed Hood's army. Sherman then speedily swept forward to the sea with his victorious hosts, again dismembering the body of the confederacy. Pushing north towards Richmond, he insured the success of the combinations planned by the commander in chief for the final decisive blow, crushing the confederacy's last armed support.

General P. H. Sheridan succeeded Sherman in command of the army, followed by General John M. Schofield. The history of these officers is familiar to all modern readers. On the 2nd of October, 1895, by direction of the president, the undersigned was assigned to the command of the army. The army of the United States was reorganized in 1866 with an aggregate force of 3,036 officers and 51,605 soldiers—total,


MILITARY AND NAVAL BUDGETS, 1904
$
340 MILLIONS
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
ARMY
NAVY
ITALY
UNITED STATES
FRANCE
UNITED KINGDOM
RUSSIA
GERMANY

54,641. In 1874 it was reduced to 25,000 soldiers. Although small in numbers, it was, in point of physical excellence, intelligence, efficiency and patriotic, martial spirit, the equal of any body of men of its number in any part of the world. It was in the spring of 1898 an army of athletes, and made a good nucleus for the great volunteer force called into service.

The war with Spain brought into service 278,000 men. To promote, as far as practicable, the principles of good administration, thorough instruction and devotion to duty, the following order was issued:

HEADQUARTERS OF THE ARMY,
ADJUTANT GENERAL'S OFFICE,
Washington, May 30, 1898.

General Orders, No. 57.

After a prolonged period of peace our army is once more called upon to engage in war in the cause of justice and humanity. To bring the military forces to the highest state of efficiency and most speedily accomplish what is expected, should be the earnest effort, and call forth the best energies of all its members of whatsoever station.

The laws and regulations which govern military bodies in civilized countries have been developed to their present perfection through the experience of hundreds of years, and the faithful observance of those laws and regulations is essential to the honor and efficiency of the army. All authority should be exercised with firmness, equity and decorum on the part of superiors, and should be respected by implicit obedience and loyal support from subordinates.

Every officer of whatever grade will, so far as may be in his power, guard and preserve the health and welfare of those under his charge. He must labor diligently and zealously to perfect himself and his subordinates in military drill, instruction and discipline, and above all, he must constantly endeavor, by precept and example, to maintain the highest character, to foster and stimulate that true soldierly spirit and patriotic devotion to duty which must characterize an effective army. The major general commanding confidently trusts that every officer and soldier in the service of the republic, each in his proper sphere, will contribute his most zealous efforts to the

end that the honor and character of the army may be preserved untarnished, and its best efforts crowned with success.

This order is given upon a day sacred to the memory of the heroic dead, whose services and sacrifices afford us example and inspiration, and it is expected that all will be fully impressed with the sacred duty imposed upon the army by the government of our beloved country

By command of Major General Miles;

H. C. CORBIN, Adjutant General.

Within a short time it was the good fortune of the army, acting in concert with the gallant navy and native patriots, to release from Spanish rule twelve millions of people in Cuba, Porto Rico and the Philippine Islands. I believe the army will in the future, as it has in the past, ever be the exponent of the best thought, inspiration and expression of the people who are now and will be henceforth enjoying the freedom of American institutions.

THE ARMY IN THE REVOLUTION.

BY J. V. S. PADDOCK.

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In order to estimate justly the deeds of the army of the American Revolution and understand the reasons for the tremendous and far reaching results of these deeds, it is necessary to view the causes of the war and investigate the origin and traits of those peoples who made up the population at the time of the struggle.

The American continent had by the fall of Quebec in 1759 become British from Florida north. The thirteen colonies which rebelled were all under practically the same form of government, with much local control. The colonists by a century of severe warfare had acquired an amount of home pride and transatlantic patriotism that made the British parliament and king more of a weakened tradition than a fact. The British flag had too often been either the token of inefficient patronage or oppressive laws and taxes.

Moreover, the large number of colonials who were of non-British origin must not be forgotten, nor the large number, particularly in New England, who had been to a great extent weaned from British local patriotism by the sojourn of their immediate ancestors in free Holland, where these progenitors not only loosed their English ties but absorbed the principles of a political system much nearer democratic than any other then extant. The influence of the Dutch upon our domestic polity, which was much greater than is appreciated by most, came not through the easy going Dutchman of New Amsterdam, but through the pushing, fanatical and turbulent Yankee of Round Head traditions.

Every American colonial who was not directly and recently from England was at least willing to listen to the revolu-

tionist's contention, unhampered by any sentiment. The Dutch in New York, the Swede in New Jersey and Delaware, the Huguenot and the Highland Scotch in the south, all these, fine people all, were quick to take arms, for to them the war was a fight against a foreign foe from the very inception of the struggle.

However, the preponderance of blood was British, the existing rule was British, the English language was practically the only tongue; customs and local laws had become quite generally uniform, and the colonies were by the middle of the eighteenth century a group of strong Anglo-Saxon commonwealths whose citizens were individually of a much higher grade of intelligence, enterprise and courage than were those of Great Britain proper or of any European country. Only the brave explore; only the strong and daring emigrate.

The house of Hanover gave to the British throne a ruler who could not grasp the idea of a free people at home, much less across the Atlantic. Tradition, caste and sentiment were still all powerful in Britian; but these had little weight with a free people who had never seen anything but the seamy side of monarchy.

Communities, like men, when arrived at a certain stage of growth, demand a share in the ruling of life. America (the word had long been familiar to the colonial) was no longer a child. The time had come when the colonies realized this and the demand for representation in the parliament was so strong that to ignore it was to bring on a struggle. The contest was not at first for independence but for rights within the empire; but it was soon evident that no halfway measures would cure the ills which America was suffering, and separation came as the only logical result of a successful war. The military events of the 18th century had prepared the Americans for a fight, and had moreover engendered a feeling of confidence which added to the resentment and impatience under misgovernment.

The three principal campaigns of this century culminated in the capture of Louisburg, the conquest of Canada and the defeat of Braddock. The taking of Louisburg was the most clean cut victory, although not the most important event in its

results. The expedition was conceived in the colonies, manned by colonials, commanded by a colonial officer, and fought out on colonial lines and methods. It was from a purely military standpoint a very brilliant feat.

The conquest of Canada, brought to a finish by the capture of Quebec, was very materially a colonial affair, but the nucleus of the command and the commander were English. A great deal of glory clings to Wolf at Quebec, but as a fact, his plan was hairbrained and only justified by the result, which result was solely due to the French commander's egregious blunder.

Braddock's defeat was the last attempt of the English regular to show the American how to fight. There were colonial troops and colonial officers in the command, who saved what was saved—but the outcome was the fault of British ignorance and British arrogance—and there was no French blunder to enshroud the dead English in glory.

These three campaigns should have taught the English, and did teach the Americans, that the colonial could win, and that the English soldier could lose.

With this confidence in their own strength strong within them, with the resentment at misgovernment growing more bitter every day, George III could find no better solution of the trouble than more oppression, more irritation, more tyranny. This ruler, whose tenure as king of England rested entirely upon an act of parliament, and who was nothing more in theory than the creature and servant of a free people, attempted, in his method of governing, taxing and bringing back into the fold the turbulent colonies, to set back the wheels of progress an hundred years, and to handle the American provinces as his ancestors had handled rebellious Hanoverians in the seventeenth century.

The overt acts which brought on hostilities were in themselves trivial. And while they did precipitate the war they did not cause it, for the war was really the march of human events, the forward movement of the world. As a matter of fact, few of the Americans felt ready to appeal to arms, and even after blood had been shed still hoped for a reconciliation. The stamp act, the tax on tea and other luxuries were not

heavier burdens than were borne at home. The Boston port bill was entirely punitive, and it is always dangerous to try to punish an entire community for the acts of a portion thereof, be these good or bad.

The American revolution as a political event was at last brought on by the American army, even before it was organized as such. The ex-soldiers in America brought the dispute to an issue and a solution, and in addition to the actual fighting were the principal influence in keeping alive a national hope. There is no like case in the history of the world. The army was the nation; when it was winning, America was a fact; when it was losing and hope was down, there was no American nation. The continental army was never the creation and servant of a government, but made and sustained itself by its deeds and by its devotion and endurance created a free and independent people.

The engagements of Lexington and Concord and the battle of Bunker Hill were fought before the continental army had come into existence. These contests were not affairs which called for anything more than individual courage and skill—qualities that were supposed by the British to be lacking in the colonials, although their existence had been proven on many a field during the last one hundred years. There was little or no organization among the Americans at Lexington and Concord but a unanimous attempt to do the obvious thing, i. e., harass a marching enemy, amounted in that case to the most perfect discipline and training. The battle of Bunker Hill was on the part of the Americans entirely a defensive fight; again, all that was needed the colonials had, cool courage and the ability to wait. The personal devotion and confidence of the American fighters supplied all deficiencies due to lack of training, and there could be but one maneuver, i. e., a retreat, and from that day to this there seldom has been enough left of a defeated American army to make it necessary to accomplish a skillful retreat—nor has the victor often been in shape to push a pursuit.

The continental army was organized before Boston by Gen. Washington in 1775, just after Bunker Hill. He was named for commander ostensibly by the continental congress,

in fact chosen by the troops on his record in the earlier French and Indian war. Washington at once proceeded to enforce discipline and the study of tactics and maneuver. Being himself a graduate of the American school of warfare and in no way hampered by old world traditions, he trained his army on lines thoroughly suited to local conditions. He was delayed and shackled by lack of powder and other material, but the capture of military stores at Ticonderoga and at sea relieved this to some extent. No commander ever had better material of which to make an army and no general ever handled one with more skill. Washington's civic deeds have so overshadowed his military record that he has not been given the rank as a soldier which he earned. He was often charged with not being a fighter and too fond of the retreat. Yet his way was to harass and wear out the invader—not to win victories at the expense of losing soldiers that could not be replaced. When an opportunity to strike offered, no general in history was more bold, enterprising and prompt.

The first movement by Washington, while before Boston, was to fortify Dorchester Heights. The possession of this point made the city untenable and the British promptly evacuated. Washington, with the eye of a soldier statesman, knew that New York would now be the British objective. Hence he hurried the army there and fought a series of drawn and unsuccessful fights—not without their value to the continentals, because anything short of annihilation was really an American success. New York and vicinity being at heart tory the Americans lost the advantage their personal skill and daring usually gave them, and for the only time during the war the British army had an opportunity to show that Britons were the best soldiers in the world except those of their colony, America.

Washington, in order to save his army, was obliged to fall back through New Jersey. The British and many colonials thought this was a flight instead of a move on the chessboard of war. Suddenly turning on the enemy, the Hessians were surprised at Trenton. The courage and devotion of the American forces is nowhere better shown, and the skill of the commander in his choice of time and method was beyond

praise. The second surprise, Princeton, was one of the most remarkable operations in the history of warfare, and stamped the Americans as great fighters led by a genius in war. So generally was this acknowledged that henceforth the British never underestimated the continental army and never again were they caught off their guard. Henceforth the American battle shout was heard with respect and attention.

After the battle of Princeton the British military policy was directed more to undermining the power and influence of the continental army than it was to catching and beating it as an organization. While the Americans were lying at Valley Forge in the winter of 1777 the British were content to hold New York and Philadelphia instead of pursuing and destroying the continental army.

It was while the American army was at Valley Forge, enfeebled, suffering, almost discouraged, that the British had the one chance of the whole war of destroying the insurgent force and thus bringing the contest to an end in favor of King George; but the fact was that by this time repeated failures had so impressed the British that they cared not to venture in the open country even against a poorly equipped foe.

It was during the year 1777 that Lafayette and the foreign military experts, Steuben, deKalb, Pulaski, and Kosciusko, joined the continental army, bringing with them a vast fund of experience and skill. This was promptly utilized by the Americans, although modified by them to suit local habits and necessities. It was the British inability and unwillingness to so modify and modernize their methods that balanced for the continentals their lack of numbers and material.

While the main American force was enduring and fighting through New Jersey and Pennsylvania there were important events in the north. It had long been the belief of the English that could the New England colonies be cut off from the others, the power of the rebels would be so broken that the confederation would disintegrate and the colonies be easily brought back.

The Canadian provinces, not having joined in the rebellion, were a safe region in which to prepare for and from which to execute this plan. There were several apparently strong elements in favor of the English in an attempt to cut the colo-

nies apart by an expedition down the Hudson river. Canada was loyal—at least not in rebellion; there were many tories in New York and many more who were for the winner. Then there were the Indians, who of course would be hostile to the colonials, as settlers, and friendly to the invaders as avengers and paymasters.

General Burgoyne, a good general on conventional lines, was placed in command of a strong and well equipped army, in Canada. His army was hampered from the start by being too well equipped in the way of useless baggage, and not equipped at all with a proper conception of the task before it. There was no time when Burgoyne had a real prospect of success; and the Americans under Schuyler, and later under Gates, fought the campaign on what had become recognized by them, under Washington's teaching, as the safe and sure method of defeating an English army.

The British met with the usual troubles in trying to move a civilized army through an uncivilized region, and the use of savage allies was a blunder, since their presence, while of no great military advantage, gave added strength to the Americans in that it brought to them many who had wavered, and enlisted the sympathy of all right thinking peoples throughout the world.

The delays met with by Burgoyne due to natural obstacles and the harrowing tactics of the American scouts and bush-fighters made it necessary for the British to replenish their stores. Knowing that there was a large accumulation of material at Bennington, Vt., Col. Baum was detached with a command made up of Hessians, Canadians and Indians to capture this place. Baum's command was doomed from the first from its make up. Stark, in command of about 1,000 Americans, mostly veterans, made a very skillful attack and won a victory in approved methods, improved by American skill and marksmanship.

The battle of Bennington was the beginning of the end for Burgoyne. Even a drawn battle would be fatal, as he must reach his destination, a junction with the British general, Clinton, on the Hudson, or his expedition would be a failure. The Americans realized this and by a series of attacks so har-

assed and hampered Burgoyne that at last he could neither advance nor retreat. He therefore after an ineffectual struggle surrendered his entire command at Saratoga.

This event was the turning point in the war. The alliance with France was now openly consummated, and henceforth the American army lacked not stores nor the presence of troops thoroughly up in European drill and methods. This alliance also took from the British the free use of the adjacent sea.

No reconciliation was now possible, no terms could be discussed while there was a hostile soldier within the boundary of the new nation. From the day of Burgoyne's surrender no American had any fear of losing, and the timid, the lukewarm and the time serving hastened to line up with the new flag, earnestly striving to atone for their record.

The struggle had now reached a second well defined stage. With the British practically sealed up in the seaports in the north, the continental government in working order, with a civil government, envoys abroad, a small navy at sea, and a system of currency, it was no longer a revolt of colonies, but a war between two nations. The one old and rich but hampered by distance, dissension at home and European foes; the other young, lusty and hopeful. The British army was no longer in the role of a force putting down a revolt; it had become an invader in a land becoming day by day more bitterly hostile, more actively and unitedly warlike. The situation was so patent to the leaders on both sides that the British could only hope for an honorable peace; the Americans demanded the annihilation of their presumptuous foe.

The war was fought, and fought out in the northern colonies. Except Virginia, the south was not sufficiently populous, not rich enough, and too largely agricultural to be a vital factor in the struggle—and it was only in these southern colonies that the tory element was either strong or respectable. In the north the tory leader was a smug merchant, a royal official or grant-land owner; the tory rank and file were animated only by the most sordid motives and always failed at the supreme test. The south, on the other hand, being made up of large land holdings, was still feudatory, and the tory leaders, as did the patriot leaders, had their feudal following.

The warfare in these colonies had been carried on with fluctuating success, the country being at first about equally divided—but in the mountains and forests back from the sea was a population not tied to any land, not bound by any traditional loyalty to England. These men, trained riflemen all, had fought under Morgan, Cresap and others, through all of Washington's campaigns, and soon knew both the scientific and the American modes of warfare. These veterans, with Gen. Greene, Washington's most skillful lieutenant, were sent to clear the south of the invader. By a series of remarkable feats of logistics this officer, although at times in dire straits, finally forced the British under Cornwallis to take refuge at Yorktown. Greene was not a little aided by the partisan warfare carried on by Marion, Washington, Sumter and Pickens, whose operations were a constant source of danger and confusion to the British. in that they ignored all the rules of the science of war.

Although, as previously stated, the war was fought out in the northern colonies, including Virginia, the operations in the south should not be underestimated, nor their results measured by numbers. The moral effect of the failure of the British to hold even the weaker provinces was very great in England and throughout Europe.

Washington, as soon as he learned that the British were driven to the coast, gave up the pretense of trying to capture New York and hastened south with his entire command, which now included a French army under Rochambeau. The siege of Yorktown and its defense were conducted by entirely conventional methods and the surrender marked the end of the war as far as the continental army was concerned.

In looking back over the years of the war of the Revolution it is well to remember that, after all, the only thing required of an army is results. Brilliant marches and spectacular battles are certainly not called for in a contest for national life. No army in history ever fought a better fight, no army ever had a greater responsibility, and no army ever asked or expected a more modest reward.

Yet again, no army in history was ever more fortunate in that, all through the struggle, incompetency, dilatoriness and

worse seemed to pursue its enemy. A good English commander would find himself tied by failure of proper support or stupid instructions, or when the English ministry would succeed in organizing and sending over a strong column, it would be placed at the disposal of a sluggard in war, or an incompetent in statesmanship. Moreover, chance and weather almost invariably declared for the colonials.

There was no time when the destruction of the continental army would not have ended the war; but such was its wonderful coherence and resiliency, such was the military genius of its commander, that in not one battle was it completely routed or even disorganized. In few of its battles was the number anywhere equal to that of the enemy, in few were the supplies adequate; yet it beat the British on scientific lines frequently, and always in any style of fighting that involved a departure from accepted military tradition. In fact this ability to evolve new methods, this genius for innovation, was a source of growing strength to the Americans, and at Yorktown Washington commanded the finest army the world had ever seen. The men in the ranks were of high intelligence and some education and, like the officers, actuated by the highest motives. They were men of fine physique and all accustomed to arms and skilled in their use—many of them woodsmen and marksmen by trade and all having that wonderful American trait, initiative. Many a small fight was won, many a battle influenced, by the individual American soldier and his deadly rifle. Quick to see and to act, the American officer felt that he could call for more from his men than could an officer in the British or Hessian forces.

The Americans endured more hardships and privation than ever fell to any army in history that was making an offensive campaign. Months without pay, lack of food, and sickness and cold—these were the routine thing in the continental army, yet the war went on. The army was created in oppression, nurtured in hardship, and held together by sentiment alone. And more bitterly was felt the indifference of the people at large than all material troubles.

Few realize that in addition to founding a republic and sowing the seed that produced another—for there is no doubt

the French who had been in America during the war carried the germs of freedom to France—the continental army revolutionized warfare. Previous to this it had been customary for hostile forces to go into winter quarters, and war being more or less of a pastime for the ruling caste in Europe it was very bad form to interfere with the social amenities and festivities of winter quarters. Washington's two most startling feats were performed in the depth of winter.

It was first in the American army that the question was asked as to the personal ability of the individual recruit. He was first, last, and all the time required to be a marksman. The object of all practice was not to have the guns all go off at the same instant, but to have the bullets each go to a selected mark. The Americans wasted very little ammunition and generally had little to waste. At the battle of Bunker Hill fifteen hundred marksmen with less than twenty rounds of ammunition, repulsed three attacks and killed more than a thousand English, paying particular attention to the officers.

It was first in the American army that the man was required to be able to take care of himself. In any emergency or emeute a British or Hessian soldier, if he got out of touch with his officer, was worse than helpless—he was a joke; even small detachments, if suddenly confronted by anything unusual or unexpected, either herded dumbly or stampeded.

The continental army was the first one in modern history to be officered on merit. A commissioned officer had nothing of caste or social prestige to give his commands weight, and little of discipline. If he did not prove himself a leader because he could lead he soon sought other lines of work. Moreover, as the pay and emoluments of an American officer were from little to nothing, only an ability to lead and a desire to devote this ability to his country was the inducement to take service. The results that may be expected when even a poor army is so officered were seen in the wars carried on by the first French republic; and the astounding results attained by a good and well equipped army so officered were seen in the Russo-Japanese war of 1904-5.

At no time during the Revolution was the continental

army as large as fifty thousand and at times it was less than ten thousand. Yet there was a continuous organization, made up of brave, devoted and skillful fighters who knew not how to give up the struggle and who felt that British dominion in the rebel colonies was doomed, could they but hold out. And hold out they did, demonstrating to the world that the volunteer army of a free people is the master of warfare. Nothing less that an overwhelming preponderance in men and treasure can hope to resist it.

Thrice armed is he who hath his quarrel just, but ten times armed is the nation whose army is of its best, fighting for love of country, and not as a profession or because driven to the shambles. Leaving aside the question of years, the flower of America was in the Revolutionary army. It is estimated that twenty five thousand would cover the number of respectable tories who took arms. Only the old, the timid and the time-serving rich remained out of the struggle. From the day the veterans of England were repulsed at Bunker Hill farseeing men on both sides knew that the contest was hopeless for England. The riflemen who scourged the British column back from Concord were material upon which an invincible army could be and was built. The settler in the forests of New York, on the hills of Pennsylvania, in the brakes of the Carolinas—they were all of the same fiber and a Washington could mold them.

In the history of the world there is no tale of an army which made a better fight or whose work was of such grand and lasting benefit to humanity.

The American army of the Revolution was not the first army that had fought for freedom. The Greeks, the Swiss and the English Round Heads had done this, and successfully. The English at home during these very times were silently and peacefully striving to attain what their government refused the colonies. It was more than freedom the Americans fought for—it was the right to enjoy this freedom, to regulate it in their own way and to say who should share it, and the right to provide that freedom should come to all alike without license or privilege. Wrongs which had become vested rights, authority and privilege based on a past and not justified by

a present, were no longer to be tolerated; and these the Revolutionary soldier killed for all time in America.

The new American nation was a republic, but the American army was a true democracy and in and through it democracy came to the world and freedom lives.

THE ARMY IN THE WAR OF 1812.

BY FRANCIS W. SHEPARDSON.

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The second war between the United States and England, sometimes called the second war for independence, and usually referred to as the war of 1812, was a strange affair. The more carefully it is studied the more peculiar it appears. The factors entering into it were many and varied. There was the commercial greed of France and England and their rivalry in European politics; there was the ambition of Napoleon; there was the economic situation among the laboring classes of England; there were the differences of opinion in America, where the interests of the commercial element in the east came into conflict with the theories of the agricultural regions of the west; there were the wrongs of the Indians and the clamors of the border folk against them. Such were some of the elements which were to be reckoned with, and which shaped one feature of the war or another. It is a remarkable fact, too, that the principal avowed cause of the war was actually removed several days before the declaration of war, and another equally interesting fact, that what has been accepted as the greatest battle of the war was fought after the treaty of peace had been signed. In these two last mentioned matters the trouble was with the lack of speedy means of communication. Had the Atlantic cable been in existence in 1812, there might have been no declaration of war, and there certainly would have been no battle of New Orleans to make Andrew Jackson a great hero and a future president of the United States. The American people were hopelessly divided upon the wisdom of making war. The people of the east resisted with more and more

vehemence as the years went by, coming close to the verge of treason, while those of other parts of the country seemed to push matters farther than was desirable to keep the new nation harmonious. Planned as an offensive war with the capture of Canada as the definite object, it became a war of defense in which our capital city was captured, our public buildings burned, our territory seized, and from which we were glad enough to escape in the status quo ante—the condition before the war—leaving the annexation of Canada forgotten in our desire to get out whole.

The United States was not prepared for war. In fact the United States has never once been prepared for war. Our policy of peace and freedom from entangling alliances, our isolation from the powers of the old world, and our lack of a standing army have combined to make us careless of these details which are scrupulously attended to by warlike nations. No war ever illustrated this so well as the second war. In the first place we were young and undeveloped. Our territory was vast and our population had been growing and spreading far faster than our financial condition would permit us to keep pace with. There was a marked lack of means of communication. The era of canals and railroads was a score of years in the future. There were few roads or bridges or ferries. There were main lines of travel, to be sure, but when the traveler turned a little way inland from the coast it was apparent that travel was difficult, dangerous and extremely tedious. Detroit was a far distant outpost. New Orleans was a remote port, not to be visited overland, but available by water only. The east had little conception of geographical conditions in the west; the west felt isolated and ignored by the east. This lack of unity was natural. It is not to be wondered at at all. It would have been a miracle had the various sections of the country been welded together into a homogeneous mass, when every possible influence except that of blood relationship and perhaps a small sort of pride in the achievements of the Revolution, tended inevitably to separate east from west, north from south. When, now, to this geographical separation there was added the clearly defined difference of opinion regarding the advisability of en-

gaging in war, the foolishness of the struggle seems apparent. From the standpoint of a cool consideration the thing to be done undoubtedly was to look after our own growth, husband our strength, make our preparations, and then, when all ready, attack the giants of Europe who were injuring us daily for their own selfish ends.

In the second place our fiscal system was sadly deranged. If it was a questionable act of wisdom to engage in a war against one of the great powers of the world, when our people were loosely joined together, scattered over a wide range of territory having poor means of intercommunication, and divided upon the main question, it was even more foolish to declare war, when our finances were in bad condition, our machinery for borrowing and administering rusty, and the money of the country in the hands of those who were opposed to the war as hostile to their commercial interests. Since 1791 the government's finances had been handled by the Bank of the United States, an institution founded by Alexander Hamilton as part of his comprehensive plan for the centralization of the powers of the government. During the twenty years for which it was chartered it had met with much opposition from the states' rights, strict construction party which had been in power since Jefferson's accession in 1801. When the time came for a recharter this opposition made its power manifest, and by an exceedingly close vote congress in 1811 refused to extend the charter and the bank went into liquidation. This deranged the finances of the country which were in poor condition at the time of declaration of war the next year.

In the third place the organization of the military forces was woefully inefficient. The secretary of war, William Eustis of Massachusetts, made a conspicuous failure of administration and was succeeded in the middle of the war by John Armstrong of New York, who had equally poor success for a year and a half, when he was followed by James Monroe, the secretary of state, who held both offices until the close of the war. At the outbreak of the war the generals were mostly old men, schooled in the Revolutionary war and living on reputations made in the past. Their ideas were old fashioned,

they themselves were sluggish because of age, and in more than one case they were incapacitated for active duty because of too much indulgence in strong drink. They delighted in high sounding proclamations calling upon men to dare and do, but there never was a case when anything was dared or done. The army they commanded was small and poorly equipped, less than seven thousand men being enrolled, and scattered all over the country, doing garrison duty, fighting Indians, and in no way prepared for war with the trained battalions of England. In the absence of a standing army the country was dependent upon the militia and the volunteers. But, under the constitution, the militia can be called out only to execute the laws of the union, suppress insurrections and repel invasions. The best equipped and organized militia were in the older states of the east, and as the people of these were bitterly opposed to the war their governors refused to permit the national authorities to make use of their troops. Some folks called this treason, but there was more than a question whether the militia should be used in what was plainly an offensive war. This was the condition of things from the military standpoint. There was nothing to be done by the advocates of the war except to show that it was a just one, in which every patriot should join, and one which no self respecting nation could avoid. That brings us to consider the causes of the war.

To understand the situation there must be a review of the history since Washington's day. Although England recognized our independence in 1783, she did not send a minister to us until two years after the constitution had gone into operation, that is, until 1791. Though she agreed in the treaty to give up all military establishments within our territory, she held a number of western posts until 1796, and there was just ground for thinking that she used these points of vantage to stir up the Indians against the pioneer settlers, largely in the interests of her own trade. Sometimes, even, "Indians" were seen whose faces and necks were stained with pokeberry juice but whose white skins, uncovered in the stress of battle, revealed their true identity. The whole attitude of England was domineering, bullying, and mortifying to our pride. Her

influence on the seas led to harsh commercial acts, which worked mostly against us, because we carried so much of the merchandise of the western world. When the pressure of the war with France began to be felt she set up the claim that she had a right to search our vessels for British seamen, many of whom deserted because of the severe treatment given sailors and also because of the better pay offered by American captains. The right of expatriation claimed by the United States was denied, and once an Englishman, always an Englishman, was asserted in its most brutal form, impressment of men undoubtedly deserters from English ships leading easily to impressment of genuinely American born sailors. Thousands of men were thus taken from our vessels, the humiliation of the right of search coupled with that of impressment being almost too much to be borne. Then Napoleon took a hand. If the British government issued a proclamation affecting American interests, Napoleon issued a counter one. If the British declared the ports of the continent blockaded against neutral vessels of the United States, Napoleon made the same declaration about the English coast. If American vessels were searched by the English, Napoleon declared any such vessels subject to confiscation by him. If the English stole property as contraband or seized it to control trade, Napoleon met their act with another equally injurious. It was hard to decide which was the greater aggressor. If we thought of France as our old time ally and friend, her action seemed the most grievous. There was just as good reason for war with France as with England, and when the long continued menaces of the two governments were balanced, it was six of one against half a dozen of the other. But there was a personal element in the impressment of American seamen, and that undoubtedly was a controlling factor in the final determination to fight England. The bitterness was specially keen in the west, because there the Indian problem complicated matters. It was the west and the south that decided matters, the young leaders of the new democracy, Clay, Calhoun and Crawford, being the controlling forces. President Madison had followed Jefferson's pacific policy. It was a taunt of the federalist leader that the nation couldn't be kicked into a war, this being aimed at the republi-

can party, which under Jefferson and Madison had stood all sorts of abuses and insults from France and England, with no more positive objections than those made by the passage of embargo and nonintercourse acts, keeping our ships at home, shutting off our trade with England and France, and as many of the opponents of these measures declared, cutting off our own nose to spite our face. When the young republicans mentioned above took a hand in the fight, they told Mr. Madison, so the story goes, that he must declare war or be defeated for renomination for the presidency in 1812, and as he was exceedingly anxious to serve two terms in the executive office he accepted their ultimatum and made his declaration of war, his war message going to congress June 1, 1812, congress passing the act for war on the 18th of the same month. President Madison stated the three principal grievances of the United States to be, (1) The impressment of American seamen, (2) The British Orders in Council affecting the rights of neutral nations on the seas, and establishing sham blockades, under which our commerce had been plundered in every sea, and (3) The sinister influence of the British over the northwestern Indians by which they were encouraged to outbreak against the citizens of the United States.

At once the cry was, On to Canada, the feeling being strong that a show of American strength in that country would result in an immediate uprising in favor of the United States, so that peace would soon be dictated at Quebec or Halifax. There was some talk of the possibility of doing damage through the navy, but the greatest reliance was placed in the Canada movement. New England being hostile to the war, the line of campaign was planned west of the Green mountains. The triple movement which has characterized most wars between the country south of the St. Lawrence and that north of it was adopted, and it was proposed to send expeditions by the Lake Champlain route in the east, across Niagara river in the center and across the river at Detroit in the west. Canada west would be speedily captured, and then by more effort Canada east likewise would come into our possession.

The campaign began in the western division, General William Hull, an old revolutionary officer, being in command

at Detroit. He crossed over into Canada, issued a high sounding proclamation to the Canadians, who took no interest in it, had a few skirmishes with the Indians, and then fell back to Detroit. He was far from his base of supplies. The government did not help him any, partly because it did not have any money, men or equipment, and partly because, even if it had, the means of communication with Detroit were too primitive for military purposes. The result was, that when the British forces under General Brock came to Detroit, although Hull was behind the fortifications, he disgraced himself eternally and humiliated the western people shamefully, by hauling down his flag without consulting his fellow officers or firing a gun. That finished the invasion of Canada from the extreme west, for, although some fresh troops were sent to regain Detroit, they were surprised in an engagement at Frenchtown on the river Raisin not far from Detroit, most of them were taken prisoners, and many of these were massacred by the Indian allies of England. Some time later another expedition tried to invade Canada, but it was driven back and the offensive war in the west was ended for at least a year.

The campaign in the center lacked the disgraceful features of the surrender of an army to complete its story of failure, but no progress was made toward Canadian possessions. Here also the general in charge was a revolutionary officer, Henry Dearborn, a man past sixty years, slow and sleepy. His duty was plain to make a lively movement against Canada from Niagara so as to detach troops otherwise available against Hull in the west. He fooled his chance away, granted an armistice during precious days when Hull was being hard pressed, and finally gave way to General Stephen Van Renssalaer, who found the army in bad shape. There was neither discipline nor equipment. Some of the men had no shoes, there was not ten rounds of powder to a man, nor a single pound of lead, nor more than one heavy gun, and that had no one to man it. He drilled his men patiently, tried to keep them from a forward movement until they were ready, and when at last he was forced to lead an expedition across the river, pressed by the charge that he was a federalist and opposed to the war, it was badly mismanaged, there was plenty

of sheer cowardice, and although Van Renssalaer was four times wounded, his personal bravery availed nothing. Six hundred of his men were forced to surrender to the British, who captured also three hundred skulkers and cowards on the outskirts. Van Renssalaer escaped, and sent in his resignation, which was accepted by his superior, Dearborn, who denounced him to the secretary of war as an ignorant militia officer who was jealous of the regulars. Then a regular was put in command, General Alexander Smyth, who immediately issued a high-sounding, boastful proclamation telling what he intended to do, closing with the war cry, "The cannon lost at Detroit or death." The story is a sad one. A new army was gathered, an expedition was planned. The impatient soldiers were making good progress and success seemed certain, when, to the astonishment of all, the general declared the plan abandoned. Furious with rage the soldiers forced him to a second attack, and again the order came to give up the movement. Then the general asked leave to visit his family in Virginia, and sneaked away through unfrequented ways, not however until he had fought a duel with his inferior in command, who branded him as a coward. The seconds in the duel were careful, however, to withdraw the bullets from the pistols, so that no one was hurt. Such was the character of the fighting around Niagara. During the war there were a number of engagements in the vicinity, in one of which York, now Toronto, was captured and its public buildings burnt in an unauthorized manner. In another during July, 1814, at Chippewa and Lundy's Lane the American troops drove the British from the field and came near winning a victory, but they were unable to hold the ground gained and so technically lost credit for a victory. Some have claimed Lundy's Lane to be the only land victory won by Americans during the war. The movement in the center thus failed as hopelessly as that in the west, and there was no success in the Champlain country either. The plan to acquire Canada through war was a dismal failure.

Now the tide turned. The British began to encroach upon the dominion of Massachusetts in Maine. Islands were seized and the main land threatened. The northeastern boundary was an unsettled one, the dispute holding over from the Revolu-

tion. It was not finally settled until the Webster-Ashburton treaty of 1842. The war afforded England a good chance to seize some of the disputed country and make good the mistake of her representatives in 1782, when they outlined a boundary with the United States which cut them off from the eastern possessions and made New Brunswick less accessible to Quebec. Late in the autumn of 1814 five thousand men landed on the shores of Chesapeake bay and started for Washington. There was tremendous confusion, mismanagement, stupidity, cowardice, and general incapacity. Six thousand men were gathered to meet and resist the enemy, General Winder being in command. They made their stand at Bladensburg within sight of the capital. Almost at sight of the red-coats, the soldiers turned and ran, taking part in what was facetiously called the Bladensburg races. The British took Washington on August 24, 1814, destroyed the public buildings in revenge for the act against York, and then shortly moved on Baltimore. It was during the defence of this city that Francis Scott Key had the inspiration which resulted in the Star Spangled Banner. The close of the campaign of 1814 showed the condition of the United States deplorable indeed. The capitol had been taken and burned. Many of the public archives had been destroyed. The army was demoralized. The antagonism to the war was increasingly active. Everyone was ready to hear that the envoys already in Europe considering peace had been successful in securing it without dishonor. The war had been a conspicuous failure, so far as the movements of the army were concerned. The war for conquest had become a war for preservation of what we already owned. Fortunate it was for us that the English people, too, were tired of war and were ready for peace with us.

But the war was not without glory, for the navy towards which some eyes had been hopefully directed, startled the world by its achievements and kept up the drooping spirits of those Americans who lost heart because of the disasters on land. Congress had not been generous to the navy. There were more officers than ships for them to command, and more eager sailors and marines than there were ships to hold them. The wonderfully animating spectacle was witnessed of men taking

turns in making sea trips, those left behind more eager if possible than the fortunate ones permitted to go. There were four good fights with the British on the sea in 1812, in all of which the Americans won the victory. On August 19th the Constitution, under Captain Isaac Hull, a relative of the general who figured in the disaster at Detroit, three days before, captured the British frigate Guerriere after a two hours' fight off the Gulf of St. Lawrence. On October 18th the Wasp captured the British vessel Frolic, both being taken soon by a British seventy four pounder and carried into Bermuda. On October 25th the United States under Captain Decatur compelled the commander of the British Macedonian to strike his colors, and on December 29th the Constitution, now under Captain Bainbridge, destroyed the British Java, thus giving Old Ironsides the credit of two victories within five months and ending a year of triumph on the ocean. For the flag of England had never been taken in humiliation from a British frigate since the days of John Paul Jones. Now the idea that England was invincible upon the ocean was gone forever, and a neutral nation had asserted its own rights there. Our privateers, too, had been active, over three hundred prizes having been taken during 1812. These naval victories did more to establish our prestige than anything in our history. No one knew or cared about the geography or the conditions of the small land engagements. These naval victories stirred the world. In 1813 there were four important naval duels in which honors were even, each side getting two victories. But one of the American victories was a specially notable one. On June 1st Lawrence had been killed in the fight between the Chesapeake and the Shannon, his dying words, "Don't give up the ship", being taken as a motto by Oliver Hazard Perry who undertook to create a fleet for the control of Lake Erie. He captured a British brig, bought such American boats as he could, and then built five more vessels out of green timber cut from the shores of the lake. On September 10 he attacked the British squadron and after a hard fight, during which he changed his flagship, crossing from one vessel to another in the midst of a fierce fire, he compelled its surrender, this being the first time in England's history that a whole fleet had been surrender-

ed. Perry's laconic dispatch to General Harrison has become one of the famous messages of the western hemisphere: "We have met the enemy and they are ours, two ships, two brigs, one schooner and one sloop." This victory was followed by a land movement into western Canada, where the British were defeated at the battle of the Thames, the great Indian Tecumseh being slain. As a result Detroit was recovered, and the British menace in the west was removed, while the Indians hastened to smoke the pipe of peace and declare submission to the United States. In 1814, just about a year after Perry's victory, Captain Macdonough on Lake Champlain won another great triumph over a British force which had more ships, more men and more guns.

One other campaign of the war is to be mentioned, a campaign of comparative unimportance from the standpoint of the war department, but one fruitful from that of the political history of the United States. After the close of the Napoleonic war with the retirement of the great Frenchman to Elba in 1814, the English planned to send more troops to America, and some of the trained soldiers from the battlefields of the continent started for New Orleans, no doubt planning to force from the United States some concessions of territory as indemnity. Some of the officers took their families along, intending to settle in Louisiana, and there were many evidences of determination to take possession of the country permanently. The war department had no resources at command to enable it to meet such a crisis. There was no adequate army for the relief of the southwest. There was no money left for equipment. There was bitterness of feeling throughout the country, the people of New England calling a convention at Hartford to consider some of the matters growing out of the war. No one hoped or dreamed of any success at New Orleans. But Andrew Jackson gathered together a motley army of Louisiana militia, volunteers from Tennessee and Kentucky, pirates under the notorious Lafitte, free negroes, and a small number of regulars. These took up a strong position behind a canal which had the additional protection of a rampart behind it and an impassable cypress swamp just to the east. Here they awaited the ten thousand

veterans under Sir Edward Pakenham, the brother-in-law of the Duke of Wellington. There were about half as many Americans, but each was a dead shot and each got his man. When the battle ended in victory for the Americans with only seven killed and six wounded, as General Jackson reported, the English leader had fallen and with him over two thousand of his men. The deadly accuracy of the western army was attested by the discovery that more than a thousand of these were shot between the eyes. It took just twenty five minutes to put the enemy to rout in this main engagement, so terrible was the fire from behind the barricade where the tactics so successful at Bunker Hill were repeated by Jackson's men. It was not a great battle as the world views battles, but it was so unexpected, so complete a victory, and came at such a peculiar time that the rejoicing was tremendous. The war on land had been a dismal failure, the management of the war department had been open to continued criticism. There had been bad feeling among the army men, with backbiting and tale bearing on every hand. The administration generally had been condemned by the people, and now, right at the time of the conclusion of the peace there came the news of the great victory at New Orleans, and every official was glad to sing the praises of Andrew Jackson and swell the paean of victory, hoping thus to make the country forget the mistakes of the war. Their immediate object was accomplished, and with it another not then expected, in that Andrew Jackson was made a presidential candidate and the battle of New Orleans was made one of the great battles of our history.

And so the second war came to an end with its accompaniment of glorious victory. The United States gained nothing in territory or rights. The great question of impressment of American seamen remained unmentioned in the treaty. The close of the European wars with the banishment of Napoleon put an end to the invasion of neutral rights on the ocean. So far as our country was concerned these were dead questions forever. Probably the same result would have been reached without war, in the natural course of European events. At any rate the treaty did not cover that for which we had contended. But while we gained nothing of much value from the

treaty we did gain so much from the war that it has justly been called the second war for independence. For we cut loose from Europe and began to work out our own destiny. Up to this time our politicians had been divided in interest between English and French sympathizers. No action was ever taken without a thought of its bearing upon European nations. The questions before the people had been questions of external interest, now they became distinctly internal. The triumphs of our navy and the achievement at New Orleans had awakened the national pride. The Indians had been humbled by Harrison at Tippecanoe and on other fields. The Revolutionary heroes were passing from the stage and a new company of younger men were pressing to the front pledged to internal improvement, protective tariff, better financial machinery. With new leaders and new interests the United States started upon a period of great activity. Its population began to move westward. New states soon came into the Union—Indiana, Mississippi, Illinois, Alabama. Those who had favored the war were the controlling powers; those who had opposed it lost their influence. Political parties changed, and for five years there was everywhere substantial harmony as all people, everywhere, joined to plan and work for the upbuilding of the country, the era of good feeling which came with Monroe's presidency giving strength for the next struggle, this time to be one over the great domestic problem of human slavery.

THE ARMY IN THE MEXICAN WAR.

BY CHARLES M. HARVEY.

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The demands of physical geography which necessitated the annexation of Florida forced the acquisition of Texas. The conditions prevailing at the time made the acquisition of Texas bring war. By gaining Florida—the western extension of the region of that name as well as the present state of Florida—the territory of the United States on its southern as well as its southwestern side was rounded out to the boundaries which nature prescribed. The United States obtained command of the border of the Atlantic down to Key West and the control of the shores of the gulf of Mexico from that point to the mouth of the Mississippi (and by the purchase of Louisiana sixteen years earlier the shore westward to the mouth of the Sabine). The accession of Texas extended the country's control of the north and west shore of that body of water from the mouth of the Sabine onward to the mouth of the Rio Grande, made the gulf of Mexico a United States lake and gave the country a southwestern extension to its natural line, or near it. The war which this accession of territory brought carried the country's western boundary to the Pacific ocean

Ethnical considerations reinforced the geographical influences in making Texas an object of much interest to the United States before the close of the first third of the last century. A few Americans had drifted to Texas even before the annexation of Louisiana in 1803. The conquest of Texas was one of the objects of the Burr conspiracy in 1806. Burr undoubtedly relied on the aid of the Americans in Texas in the accomplishment of his plans. Moses Austin, a native of Connecticut, but a resident of Missouri at that time and engaged in lead

mining, obtained permission in 1820, from the authorities in Mexico to establish a colony of 300 families in Texas. Dying in 1821, before the project was carried out, his son, Stephen F. Austin, in 1822, got a confirmation of the grant and planted the colony near the site of the present city called by his name. At this time Mexico had gained its independence from Spain, and Texas was part of Mexico. Austin's colony of Americans grew rapidly. Americans, too, under other auspices went to the new country.

Race troubles, however, began very early in the history of Texas. An overwhelming majority of the residents of that locality were Americans. By the Mexican constitution of 1824, however, the province of Coahuila, peopled almost wholly by Mexicans, was joined to Texas, the two becoming a single state, and as Coahuila had more inhabitants than Texas, the consolidated state was under the control of the Mexicans, between whom and the Americans a strong race prejudice had sprung up. The anti-American prejudice prevailing throughout the whole republic, Bustamente, the republic's president, issued a decree in 1830 forbidding further American immigration into Texas. Then the Texans, under the leadership of Stephen F. Austin and Sam Houston, tried to have their province separated from Coahuila and make a distinct state of the Mexican republic, but failed. In 1835 Mexico's president, Santa Anna, revoked the federal system established by the constitution of 1824, abolished the state divisions with the limited share of home rule which the states possessed, and transformed the government into a centralized republic, or rather into a military despotism, for this was the form which the government assumed when Santa Anna's revolution of 1832 put that potentate in the presidency.

War began sooner than any of the Texan leaders expected. The ports of Texas were declared by the Mexican government in September, 1835, to be in a state of blockade, and a Mexican force, under Gen. Cos, started about the same time to attempt to bring Texas into subjection. Landing at Matagorda, Cos reached Goliad with 500 men on October 2, 1835, and was at Bejar or San Antonio de Bejar, on the 9th. Cos's design was to capture certain proscribed Texans, and to drive many

other Texans out of the country. But the first blow had beer struck a few days earlier than this latest date. Col. Ugartechea, the Mexican commander at Bejar, before Cos's arrival, sent Lieut. Francisco Castenada with 100 men to seize a cannon at the town of Gonzales, on the Guadalupe river. Reaching the river on September 29, he found that the ferryboat had been removed, and he was unable to get over to that town. In Gonzales at this time many volunteers had gathered, and these crossed the river on the night of October 1, taking the cannon with them; attacked Castenada on October 2, and drove him and his men to Bejar. The loss on each side was trifling, but the fight occupies a prominent place in Texan history, nevertheless. It was the Lexington of the Texan war of independence.

The Yorktown of the war came a little over six months later. The committees of public safety appointed Austin temporary commander in chief of the Texas army, and he, Houston, Thomas F. Rusk, and others then or later distinguished in Texas history, went to Gonzales, where the first fight had taken place, and from which point an advance was at once made on Bejar, to capture Cos. A small party of Texans in the meantime, on October 9, made a dash, surprised Goliad, and captured it and its Mexican garrison. At the battle of Concepcion, just outside of San Antonio de Bejar, on October 27, a force of ninety two Texans, under Col. James Bowie and Capt. James W. Fannin, defeated a large body of Mexicans, and Bejar itself was stormed and captured on December 10, after a cannonade of six days, Cos and his army of 1,100 being allowed to march out and go beyond the Rio Grande. This fight cleared the last of the Mexican soldiers out of Texas.

The political part of the revolution began to take shape before the capture of San Antonio de Bejar. The consultation which Austin urged, which was composed of fifty five delegates from the different municipalities, met at San Felipe de Austin on November 3, 1835, and passed an ordinance on the 13th organizing a provisional government, of which Henry Smith was made governor, James W. Robinson lieutenant governor, and Sam Houston was chosen commander in chief of the provisional army, with the rank of major general.

Austin, B. T. Archer, and W. H. Wharton were sent as commissioners to the United States, from which country much of the money, men and inspiration of the revolution came. A convention of delegates met at Washington, on the Brazos, on March 1, 1836, and on the 2d issued a declaration of independence from Mexico, a provisional government was chosen, of which David G. Burnet was made president, and on the 17th the constitution was signed. This instrument, less liberal in this respect than Mexico's, established slavery in Texas.

Immediately before and immediately after these political events stirring military scenes were being enacted. Even before the news of Cos's surrender, on December 10, 1835, had reached Mexico, Santa Anna determined to invade Texas with an overwhelming force, to chastise that rebellious province. With an army of 5,000 men he arrived at Bejar on February 23, 1836, and took possession, Col. Travis, with his force of 145 Texans, retiring to the old mission of the Alamo, near by. Travis, determined neither to surrender nor to retreat, sent messengers for aid to different points in Texas. On March 1, Capt. J. W. Smith and thirty one men from Gonzales entered the Alamo unknown to the Mexicans, who had begun their siege, and shortly afterward J. B. Bonham, who had also already figured gallantly in the Texas war and who had been sent for aid to Goliad, returned. Among the other members of the garrison were Col. James Bowie, the hero of the battle of Concepcion, and David Crockett, the latter an ex-member of the Tennessee legislature, an ex-congressman and a veteran of the Creek war of 1813, in which he served with Jackson and Houston. Col. James Fannin, who had figured with Bowie in the battle of Concepcion, was not at the Alamo but met the same fate as the Alamo's defenders three weeks later.

The day of doom came for the Alamo and its gallant defenders on March 6, 1836. Enraged at the havoc caused among his men by Travis and his companions, Santa Anna prepared to carry the Alamo by storm on that day. At 4 o'clock on the morning of the 6th, 2,500 Mexicans divided into four parties, assaulted the Alamo on four sides, and, though repeatedly driven back by the handful of defenders, they at length surged through a breach in its walls made by their

cannon, and then the work of destruction was quickly finished. All—Travis, Crockett, Bonham, Bowie and the other defenders who were left alive on that fatal Sunday morning—were massacred immediately except eleven. Five of these were found secreted in the buildings and were brought before Santa Anna, where, by his orders, they were shot. The lives of the other six—two American women, their two children, a negro boy and a Mexican woman—were spared. The loss to the Texans was about 180, their whole force, with the exceptions mentioned. The Mexican who superintended the burial of Santa Anna's men places their loss at 1,600 killed or died of wounds, while other authorities put the number at a smaller figure.

Just three weeks later another tragedy was enacted. Col. Fannin with 300 men was surprised and surrounded by Gen. Urrea, with about 1,000 Mexicans, near the Coleto river on March 19, and, after a desperate battle, in which they repulsed the Mexicans, they surrendered on the 20th, when 500 of a reinforcement reached Urrea, the agreement being that they were to be treated as prisoners of war. The prisoners were taken to Goliad, where, by Santa Anna's orders, all were commanded to be executed except four physicians and their assistants. The order was carried out, though strongly against the wishes of Urrea and of Portilla, the Mexican commandant, at Goliad, on the following day, Palm Sunday, March 27. When the Texans learned the fate decreed for them, many of them rushed through the Mexican lines, and it is believed that twenty seven of them escaped.

The Alamo and Goliad atrocities, which constitute the reddest tints on Santa Anna's crimson career, cast a gloom from the Rio Grande to the Sabine. It was the Valley Forge period of the Texan war of independence. Its Yorktown, however, was nearer at hand than any patriot had dared to hope. Houston, the commander in chief of the Texan army, retreating in March and April, 1836, before overwhelming numbers of Mexicans, and waiting for promised batteries of artillery which never came, excited dissatisfaction among many of his troops. It was lack of caution, coupled with contempt for the fighting qualities of the Mexicans, which cooped up Travis in the Alamo and corralled Fannin at the

Coleto. Houston, as courageous as either, but far wiser and under greater responsibility, made no such mistake. On April 21, 1836, Santa Anna's army, following the retreating Texans, was divided into two parts by the San Jacinto river, near Buffalo bayou, when Houston fell upon the portion nearest to him, and though this was larger than his whole force, he killed or captured nearly all of it, Santa Anna and Cos being among the prisoners. Houston's force numbered 783 men. The Mexicans' loss was 630 killed, 208 wounded and 730 prisoners. This crushing defeat sent the part of Santa Anna's army which was on the west side of the San Jacinto into wild flight toward the Rio Grande. Treaties, public and secret, with Santa Anna, who feared execution for his atrocities, directed that his men were to continue their retreat, the country was evacuated, and Texas independence was won. Santa Anna was with difficulty protected from execution or assassination, but he was released by Houston in the latter part of 1836, went to Washington, arriving there January 17, 1837, had an interview with President Jackson, left for home by steamer, and arrived in Vera Cruz February 23.

Of course the Texas war of independence aroused great interest in the United States. Many of the soldiers in the Texas army, like Houston, Bowie, Fannin, and Crockett, were recent arrivals from the United States. Annexation to the United States was constantly kept in view by most of the Texans. Annexation began to be thought of as an eventuality by some American statesmen even before the war of 1835–6, which separated Texas from Mexico. Henry Clay, secretary of state under the second President Adams, instructed the American minister in Mexico, Joel R. Poinsett, in 1827, to offer $1,000,000 for the Mexican territory east of the Rio Grande, which was the whole of Texas, as claimed by its residents, and as annexed to the United States in 1845. In 1829 Martin Van Buren, secretary of state under Jackson, directed Anthony Butler, the American diplomat at the Mexican court, to offer $5,000,000 for that part of Texas east of the Nueces. In each case the offer was refused. On March 3, 1837, the last day but one of Jackson's service as president, the United States recognized the republic of Texas.

In August of the same year, however, an offer of annexation made by the Texas representative in Washington was declined by President Van Buren. All the United States rejoiced in Texas' independence. All the country, or nearly all of it, felt that the annexation of Texas was a necessary step toward the rounding out of the natural boundaries of the United States in the southwest. All would have welcomed annexation at that time save for two considerations—it would enlarge the slavery area, and it would cause a war with Mexico, which never recognized Texan independence, which claimed that Texas was still part of its domain, and which declared that it would eventually restore its authority throughout that country. These considerations, however, had but little force outside of the northern states. The slavery consideration strengthened the annexation sentiment in the south. Calhoun declared in the senate in 1836 that the annexation of Texas as a slave state was necessary to the maintenance of the balance between the free and slave sections on which the preservation of the Union depended. Van Buren, in his refusal of the annexation offer of 1837, voiced northern sentiment. That refusal cost Van Buren the presidential nomination of his party in the democratic national convention of 1844.

The preservation of the balance between the free and the slave states for which Calhoun spoke in 1836 had for many years been an object of earnest solicitude to the southern democrats. In 1837, at the time that President Van Buren refused the annexation overture, there were twenty six states in the Union, thirteen free and thirteen slave. The balance in the senate was still maintained. But there was no chance to get any more slave states, in the then existing United States territory, except in Florida, which was not admitted to statehood until eight years later. There was a necessity to get new territory in the southern region which would offset the commonwealths which would soon be built north of the latitude of 36 degrees 30 minutes, which had been dedicated to freedom by the Missouri compromise of 1820. This circumstance reinforced the south's natural feeling in favor of national expansion and aggrandizement, and found expression in its newspapers, in addresses of its public men and resolu-

tions of its legislatures. As a consequence, an annexation act was passed before Tyler left the presidency, and Texas came into the union on December 29, 1845, in the first year of Polk's service.

Through the dispute between Texas and Mexico as to Texas' western boundary, Mexico placing it at the Nueces and Texas putting it at the Rio Grande, the United States assuming Texas' claims when it annexed Texas, this acquisition brought war with Mexico. By order of President Polk, given January 13, 1846, Gen. Zachary Taylor, then at Corpus Christi, at the mouth of the Nueces river, which was the western limit of Texas settlement, and which Mexico declared was the western verge of Texas territory, was ordered to advance to the Rio Grande, which Texas claimed to be her western boundary. A powerful American fleet was at this time in the gulf of Mexico. Polk had sent John Slidell, who figured in the Trent affair with Mason in 1861, to Mexico to negotiate, it is supposed, for the purchase of California, which Polk, it is believed, had in view, but although a revolution had just occurred in Mexico, that country refused to sell California

Taylor, with an army of 4,000 men, arrived at the Rio Grande at a point opposite Matamoros, on March 28, 1846, where he erected Fort Brown. Gen. Ampudia, the Mexican commander at Matamoros, sent a note to Taylor, telling him to withdraw back to the Nueces under the alternative of war. Taylor refused, and in the meantime Gen. Arista superseded Ampudia, and sent part of his army across the river on April 24 to attack Taylor. Capt. Thornton, with a small party of American dragoons, sent up the river to watch the Mexicans' movements, fell into an ambuscade on the 25th, a few were killed and the rest were captured. This was the formal beginning of the war. A messenger dispatched by Taylor soon reached Washington, and on May 11 President Polk sent a message to congress declaring that "Mexico has passed the boundary of the United States, has invaded our territory, and shed American blood upon American soil. War exists, and, notwithstanding all our efforts to avoid it, exists by the act of Mexico herself." A bill recognizing the existence of war, appropriating $10,000,000 for its prosecution and calling

for 50,000 volunteers passed congress by a large majority, and was signed by Polk on May 13. The whigs opposed the war, alleging that it was provoked by Polk, but they voted supplies for the army, furnished their quota of the volunteers and contributed the two most prominent generals in it, Taylor and Scott.

But long before congress had time to act, the war was in active progress. In order to defend his base of supplies, which he had established at Point Isabel, twenty two miles distant, near the gulf of Mexico, Taylor left Fort Brown on May 1, a regiment of infantry and two companies of artillery remaining at that place, and went to the relief of Point Isabel, Fort Brown being bombarded in his absence, and its commander, Maj. Brown, killed. On the way back to Fort Brown, Taylor, on May 8, with 3,000 men, encountered Arista with 6,000, at Palo Alta, defeating him, with a loss of forty four Americans, and, according to Taylor's estimate, 600 Mexicans. On the 9th Taylor, still moving toward Fort Brown, met the Mexicans at Reseca de la Palma, and won another victory, the American loss this time being 110 and the Mexican estimated at 1,000. Taylor captured 100 prisoners, eight pieces of artillery and a large quantity of military stores. On the 18th Taylor crossed the Rio Grande and took possession of Matamoros, which had been evacuated by the retreating Mexicans. The victories had been due chiefly to the superiority of the American artillery and the incapability of Arista, the Mexican commander, who was removed at this time by the Mexican government, and Ampudia restored.

Taylor, now promoted to be a major general, remained at Matamoros, getting reinforcements, which were mostly volunteers, and in September, 1846, marched to Monterey, one division, under Gen. Worth, having preceded him. On the 19th the whole army encamped before the city, an attack was begun on the 20th, and after desperate fighting Ampudia surrendered the city on the 24th. The Americans lost 120 killed and 377 wounded. An armistice of eight weeks, subject to revocation by either government at any time, was then agreed to, the Mexicans being allowed to take their army out of the city. The Mexican loss was not definitely learned, except

that it was much greater than the American. Secretary of War Marcy ordered the termination of the armistice as soon as he had heard of it, there being great dissatisfaction in the government and among the people of the United States at Taylor's failure to force Ampudia's army to surrender.

The armistice being terminated on November 13, Gen. Worth was sent to take possession of Saltillo on the 15th, Gen. Wooll joining him on December 20, while Taylor took possession of Victoria on the 29th. As Taylor was making preparations to march against San Luis Potosi, orders came to him which stripped him of most of his best troops, which were sent to Gen. Scott, who was to invade Mexico from Vera Cruz. Taylor, encamped at Auga Neva, near Saltillo, learning that Santa Anna, who had been put in command of the Mexican army in the revolution which deposed President Paredes in the summer of 1846, and who became president in December of that year, was marching with 20,000 men to attack him, fell back a few miles to a strong position at Buena Vista, with his force of 5,000, mostly volunteers, who had not participated in any of his battles. Here Taylor was assailed by Santa Anna on February 22, 1847, but after fierce fighting, in which the American loss was 723, and the Mexican 2,000, Santa Anna retreated.

This was the end of the fighting under Taylor, and closed the campaign in the valley of the Rio Grande. It was believed that the Mexican capital could not be menaced from the Rio Grande side, and that a campaign in that quarter, however brilliant, could have no important political consequence. Taylor's work showed the bravery of the American troops, but did not materially hasten the end of the war. Nevertheless, it gave Taylor the prestige which gained him the presidential nomination in the whig convention of 1848, and the election in that year.

Winfield Scott, who had been the commanding general of the American army since Gen. Macomb's death in 1841, and, therefore, Taylor's military superior, was restive under the policy of President Polk, which kept him in Washington, while Taylor and his generals were winning glory, but his turn came when the war had been in progress about half a year. The controversy with England on the Oregon boundary having been

settled by the treaty ratified on June 18, 1846, two months after Taylor's first battle on the Rio Grande, and Polk's hopes of obtaining peace from Mexico on terms which would secure New Mexico and California failing, it was determined to prosecute the war on a larger scale, and Scott was sent to invade Mexico from a base at Vera Cruz. Drawing off a part of Taylor's force, Scott made a rendezvous at Lobos Island, near Vera Cruz, and landed an army of 12,000 men on March 9, 1847. Under the immediate direction of Col. J. G. Totten, a celebrated engineer of that day, Vera Cruz was invested, and on the refusal of the Mexican general, Landaro, in command of the city, to capitulate, Scott opened fire on March 22, and after a four days' terrific bombardment the city was surrendered with 5,000 prisoners and 400 pieces of artillery. The Americans had sixty nine killed and wounded during the siege, while the Mexican loss was estimated at about 1,000.

The campaign from the Vera Cruz base was conducted with as much vigor as was that under Taylor from the Rio Grande, which closed with the battle of Buena Vista, a month before the investment of Vera Cruz. On April 8, 1847, Gen. Twiggs being in the advance—the Twiggs who, as commander in Texas at the opening of the secession war in 1861, surrendered his force to the confederates—Scott began his memorable march to the City of Mexico. At a position of great natural strength in the mountain pass of Cerro Gordo, Scott, with 8,500 men, encountered Santa Anna with 12,000 on April 17, stormed Santa Anna's position on the 18th, and captured 3,000 prisoners, 4,500 stand of arms and 43 cannon, the American killed and wounded in the battle being 500, and the Mexican loss 1,000. Scott paroled his prisoners, captured Jalape without resistance on the 19th, occupied Perote, on the summit of the Cordilleras, on the 22d, and entered Puebla on May 15. Here Scott awaited re-enforcements and supplies from the United States. The American army of 12,000 men, counting those left to garrison Vera Cruz and other points, had in two months taken several strongly fortified positions and captured 10,000 prisoners, 10,000 stand of arms and 700 pieces of artillery.

The arrival of Gen. Franklin Pierce with re-enforcements of about 2,500 men in August set Scott's army again in motion,

On the 6th of that month the march on the City of Mexico was resumed, Gen. Worth commanding the 1st Division, Gen. Twiggs the 2d, Gen. Pillow the 3d, and Gen. Quitman the 4th, with Col. Harney commanding the cavalry, which was in the advance. On the 20th, Contreras and Cherubusco were captured after fierce fighting, 3,000 prisoners being taken, including eight generals, two being ex-presidents, and thirty seven pieces of artillery. The Americans had 1,053 killed and wounded and the Mexicans 2,000. An armistice was granted to Santa Anna on August 23, and Nicholas P. Trist, a special commissioner from Polk, opened negotiations with the Mexicans for peace. No agreement being reached and Santa Anna utilizing the cessation of operations by strengthening his fortifications, Scott resumed hostilities. On September 8 Molino del Rey was stormed by Worth, and on the 12th, after a two days' battle, Chapultepec, by Scott, was also carried by storm.

This was the end. The Americans entered the City of Mexico on the 14th, the Mexican government having abandoned it on the previous day. There were some disturbances in the city on that day, and guerrilla fighting under Santa Anna's direction afterward, but the general result could not be changed. The American loss in killed and wounded from the time of the renewal of the march on August 6 was 2,700 and the Mexican was estimated at 7,000. In addition the Mexicans lost 3,700 prisoners. On February 2, 1848, at Guadalupe Hidalgo, a small town near the City of Mexico, a treaty of peace was signed by Trist, on the part of the United States, and three commissioners representing Mexico, whereby the southwest boundary of Texas was fixed at the Rio Grande, the line claimed by Texas and the United States, and New Mexico and California were added to the United States, for which this country paid $15,000,000 to Mexico, and assumed the payment of claims amounting to $3,250,000 of American citizens against Mexico. The American flag was lowered in the City of Mexico on June 12, 1848, and the Mexican flag was run up. It was saluted by the American troops, who at once marched out of the city, and the evacuation of Mexico began. An addition of 545,783 square miles to the country's domain was made and the boundary of the United States was advanced to the Pacific.

THE ARMY IN THE CIVIL WAR.

BY CHAS. A. PARTRIDGE.

[Charles A. Partridge, adjutant general of the Grand Army of the Republic, Illinois; is one of the best known veterans of the Civil war; he enlisted as a private in the Ninety-sixth Illinois Volunteers, and was promoted successively to corporal, sergeant, sergeant-major and lieutenant; after the close of the war he re-entered civil life, and has been one of the most active men in the organization of the Grand Army, becoming assistant adjutant general of Illinois in 1891 and adjustant general in 1904.]

The year 1860 found the United States at peace with all the world. The domestic problems that confronted the American republic were not new and few had any thought that these would not be threshed out as had been all others that had arisen since the adoption of the constitution.

The feeling of security from a foreign foe—no one conceived of domestic strife—due to the broad oceans that lave the American shores, had so influenced congress that the army had been reduced to about ten thousand men.

And this organization was not in fact an army at all, but a uniformed body of national servants divided practically into three departments. There were the engineers, a corps of scientists making civil maps, topograpical explorations and geological and geographical investigations, and doing the work of the government in dredging waterways, erecting lighthouses and building bridges and canals, all in the way of commerce and industry.

Then came, in order of precedence, the so-called artillery. This was a corps of caretakers who had charge of a series of obsolete forts that had been quite up to date about 1812.

The officers of this corps had a good knowledge of ordnance and gunnery from books, the men had most of them never even seen a modern piece of heavy ordnance. Had these old forts been armed, there were not enough men available to move them and keep the guns clean from the wear and tear of time.

The third, most important and only fighting department

of the army, was a frontier police engaged in controlling the Indians and caring for the settler and the plains man.

This work was, at its most, partisan warfare, and while a good school for the individual soldier, did little towards the training of an army—and a school for the individual soldier has ever been the one thing America needs the least. The officers of this small army were all, however, thanks to the military academy at West Point, well grounded in the theory of war, and there were a number of veterans of the war with Mexico who had had some practical experience. On account of the fact that a military career seemed more to the taste of the men of the south than to those of the north, there were in the army in 1860 a preponderance of southern born officers who, when the war broke out, with a few exceptions, resigned and gave their swords to the confederacy.

The army was so small and so scattered and shattered by resignations that it was not available even as a nucleus for an army large enough to cope with the situation in 1861. It was therefore necessary to create an army from top to bottom. Moreover there was no adequate store of arms, material and supplies, nor were there available any plants where these could be made. The government was in fact in the position of a man who has to make a voyage and finds it necessary first to construct the tools with which to build the vessel, then train the builders, then train the crew. Fortunately the confederate government was in much the same predicament, although it had the advantage of having a few tools on hand.

The union authorities resorted to the only possible solution of the problem, i. e., provided for the organization of a volunteer army of seventy five thousand men. So little was realized the magnitude of the task before them that the period of enlistment, three months, was too short to convert even the enthusiastic and intelligent body of men who responded, from an armed mob to an even poorly trained army, had there been no fighting to be done.

However, this mob promptly invaded Virginia with the idea of spending the closing period of enlistment in Richmond, the capital of the confederacy. A similar army rushed to

defend the sacred soil of the mother of presidents and a riot ensued, called the first battle of Bull Run.

Had the union mob been an army it would not have lost the won fight by a stampede, and had the confederate mob been an army, it would have been in Washington the next day.

The battle of Bull Run, however, marked an epoch in the history of warfare. The Virginia Black Horse Cavalry, as fine a body of mounted fighters as ever rode to battle, charged infantry in position. This was the end of the Black Horse, and was a demonstration of the fact that the day of the dashing cavalry charge was past, as regards any infantry of quality not demoralized by some immediately preceding event.

Bull Run was of no importance as a military event, but it showed both sides that war is a science, not an excursion, and both governments suspended operations in order to create, equip and train an army.

The situation as a military problem to be met was this: the confederate states being only desirous of seceding from the American union, were entirely on the defensive; the north in order to preserve the union must invade; to remain north of the line and protest would accomplish nothing.

It was necessary to seek and crush the newly established confederate government; this government could and did exist as long at it had armed forces and no longer—being on the defensive, the confederate army could to a certain extent select the theater of war.

There were two courses open to the union army—either find and destroy the confederate fighting forces by battle, or starve them out by destroying or obtaining control of the sources of supply. The American government wisely chose to do both. The war was therefore from the first sharply divided into two great struggles; one in the east, Virginia, aimed directly at the confederate army and as a matter of morale at the confederate capital, Richmond; the other, in the west, aimed entirely at the resources and entity of the south as a nation.

On account of the fact that the confederates in Virginia were fighting a defensive campaign on familiar grounds amidst a friendly population the struggle was during the first

years of the war in favor of the south, and the war might have gone on indefinitely or even have been successful for the south, had the southwest and west not been lost. The preponderance of men and treasure held by the north was fully equalized by the fact that the union army was the invader. The south was also fortunate in that it had in Lee one of the great defensive fighters of history, and such was his personal popularity and prestige that he was unhampered by politicians and theorists in his rear. The union army was not at first able to develop a genius in war, for no northern general up to the time of Grant was ever given a free hand.

In the consternation induced by the magnitude of the struggle the administration at Washington forgot what the history of the United States has so plainly shown, i.e., that the American soldier devises his own and original methods; and it resorted to the antique system of the star chamber, which from a closet in the capital directs in detail an army in the field.

Nevertheless, such was the devotion and skill of the union army that the confederates could only maintain a status quo. Both times that an offensive movement was made by Lee the outcome was disastrous to him and his course, and in the case of the second attempt the battle of Gettysburg was really, taken in connection with the fall of Vicksburg, the beginning of the end of the war. Henceforth the outcome of the struggle was only a question of time, as the north had shown the ability and willingness to fight to the end, and the only thing needed was to find a commander able to cope successfully with Lee. He was found in Grant and the bloody fields of Virginia had trained his army.

The problem in the west, the destruction of the confederate resources, resolved itself into two parts: first the opening of the Mississippi to the Gulf, incidentally cutting off Missouri, Arkansas and Texas, and the control of the great state of Georgia, the heart of the confederacy.

By a series of hard campaigns of varying fortune the union army found itself in 1863 in control of the Mississippi up and down except at Vicksburg. Grant, who had fought his way to the command of the army of the west, set himself to the task of taking this point. The city, which is on a high bluff,

was strongly fortified and garrisoned, and the task was much complicated by the fact that there was a strong confederate force outside under Joe Johnston, one of the most skillful strategists on the southern side.

By a series of daring maneuvers, rendered possible by the fact that his army was now a highly trained military machine, Grant beat Johnston back and forced the surrender of the city, the key to the southwest.

The capture of Vicksburg was one of the most brilliant military feats on record.

After exhausting all conventional methods Grant boldly cut loose from his base north of the city and all the time standing off Johnston, approached the fortifications from an unexpected quarter. A move contrary to all theory of war—and it broke the back of the confederacy.

The only thing remaining to be done by the western army was to secure control of Georgia.

The armies had fought back and forth through Kentucky and Tennessee for three bloody years.

Grant was made commander in chief of the entire union army, east and west, and for the first time the military power of the republic was thoroughly coördinate.

This great commander proceeded at once to follow out a general plan; he had a fine army of more than half a million, practically veterans; he was not hampered by politicians nor did he allow himself to be trammeled by false theories, old traditions or maudlin dreams of bloodless war.

He himself took active command of the army of the Potomac, an army which had retained its courage and morale through years of fruitless bloodshed in a way that is still the wonder of students of history, and the Mississippi being now clear, allowed his great lieutenant, Sherman, by a fighting march through Georgia, to prove his contention that the southern confederacy had become a shell.

With the states of Kentucky and Tennessee safe in the care of Thomas, the rock of Chickamauga, Sherman started with sixty thousand veterans on his famous march to the sea.

Cutting loose entirely from his base with no possibility of regaining it in case of failure, an act without parallel in war

history and contrary to all the canons, he succeeded in reaching Savannah, having destroyed material, stores and railroads to such an extent, besides shattering the morale of the south, that the confederacy found itself bankrupt in everything with which to maintain an army.

The march to the sea was the greatest feat of logistics ever performed by an army and only approached by Morean's retreat or the march of the ten thousand Greeks. Moreover, it was the final demonstration to European sympathy for the south that the great republic would live.

After a brief rest Sherman's army, flushed with success, proceeded north to join Grant in ending the war, and the fact that this veteran force was available rendered all Lee's attempts to prolong the struggle—he could hope to do no more —unavailable. Lee surrendered without disgrace to the largest, the best trained, the best equipped and the best commanded army the world had ever seen.

There were many things about the American army as it was in 1865 that showed it to be an epoch marking organization, in history, politics and war.

Many feared that this large body of trained armed men, devoted to the leaders, would refuse to be disbanded and demand unusual powers or privileges—so far from this being the case, the only and unanimous plea was, from general to drummer boy, to be allowed to go home! There is no greater surprise in all history than this—veterans, bearded and scarred, men who had known naught but war and bloodshed for four years, only asked as a reward for their services to be allowed to depart in peace. Verily the republic was safe!

And the men of the south—the thought was bitter, but the war was over. The contention had been carried to the court of last appeal, the supreme court of arms, and the decision was adverse. It was accepted in good faith and the southener took up in sorrow and poverty the task of rebuilding a commonwealth on new lines and fortunately with new aspirations.

The failure of secession showed the world that the American republic was to be one grand and homogeneous nation, not a loose aggregation of states, and that as such its power

would soon be greater and its influence more far reaching than that of any empire on earth. The greatest nation in the world at last was made up of a free people and no slaves, the greatest nation was a republic. The oppressed of all the earth took new hope, the oppressor in every land became less harsh and eventually waived a power that could not much longer be retained.

The American army was not fighting to save the American republic only, not fighting to free a few million blacks, it was fighting for the principle of a free republic, a government of a free people by themselves alone. Our form of government ceased to be an experiment at Appomattox, April 9, 1865.

The magnitude of the task before the American army was much increased by the fact that it was opposed to an enemy of the same blood. In the great wars of history there have usually been inferiorities or at least differences in the qualities of the men making up the opposing armies. In the American war an army had to be very thoroughly beaten to be beaten at all. So many of the battles were in fact drawn that in a majority of even the great engagements it requires the prejudice of the historian to find out which was victor.

The south claimed and believed that only the preponderance in men and money won—forgetting that it takes grit to offer men, it takes devotion to pour out money. The north claimed and believed that the fact that the union armies were invading, and therefore had long lines of communication to protect, gave the south an advantage that only northern superiority in courage and skill could overcome.

As a matter of fact neither claim was entirely just. Both armies being of the same race, the north from generations in a colder climate had more cool tenacity, the south from its warmer skies, more dash and elän. But the war in the end became a trial of endurance and resource, it could not be otherwise.

What the southern leaders thought would be their strength was in the end the cause of their defeat. They taught and thought that the north was so given over to the business life, so engrossed in the accumulation of wealth, that there could be no war if the south showed itself really willing to appeal to

arms. They also taught and thought that the northern men could not fight, forgetting that all history shows that a business people when they do decide to go to war do it as a matter of business and do it in a thoroughly businesslike way.

This business idea was so entirely the spirit of the union soldier that the war was carried on, the tools and ideas of war were improved with the same idea of utility and promptness, adaptability and economy, that animates a business man in his private affairs. From this arose the fact that the American soldier so improved military science that the war marked an epoch. Every so called modern improvement in warfare dates from that struggle. The oft called unwarlike American is the originator above all the world of new and ingenious weapons and methods.

There were devices in use in the Civil war that were rediscovered years later with great pride by European experts. Not to mention the mere mechanical, administrative, supply and medical innovations, there were two historical and spectacular maneuvers abrogated to the archives of history, the cavalry charge and the attack in mass by infantry. Pickett's grand division not only charged to its doom at Gettysburg but it marked the passing of the maneuver—and at Gettysburg the massing of the union artillery of the entire army was a revelation of the possibilities of the big guns.

Grant, who had not failed to grasp the idea that cavalry in small detachments, except as scouts and guides, had seen its day, massed the mounted forces under Sheridan into a corps of horse infantry whose mobility enabled him to carry out plans heretofore unheard of in war.

After all it is sentiment, not fact, that moves the world, and the men of the American army, north and south, carried home a sentiment that did more to make the republic one and indivisible than any brave deed or any historical fact. State lines were trampled on in theory and in fact—the northern soldier was fighting for the union, not a state—the southerner was for the south, and himself early in the war repudiated any state autonomy. Since 1865 states are geographical and police entities, only and most Americans to-day would not recognize a state flag if it should, an unusual thing, be flown.

The American republic, so peaceful and so great, claiming before the world only the right to freedom and the pursuit of happiness, was created by an army and saved by an army.

Both builded better than they knew.

THE HEROES OF THE CONFEDERACY.

BY JOSEPH WHEELER.

[Joseph Wheeler, brigadier general U. S. A., retired September 10, 1900; born Augusta, Ga., September 10, 1836; graduated West Point, 1859; second lieutenant U. S. Cavalry, 1859–61; first lieutenant Confederate artillery; colonel infantry; brigadier general cavalry, major general and corps commander, lieutenant general; congressman from 8th Alabama district, 1881–99; appointed major general U. S. A. volunteers, May 4, 1898; brigadier general U. S. A. June 16, 1900; commanded department of Great Lakes, June 18 to Sept. 10, 1900.]

History has many heroes whose martial renown has fired the world, whose daring and wonderful exploits have altered the boundaries of nations and changed the very face of the earth. To say nothing of the warriors of biblical history and Homeric verse, as the ages march along every great nation leaves us the glorious memory of some unique character, such as Alexander, Hannibal, Cæsar. Even the wild hordes of northern Europe and the barbaric nations of the east had their grand military leaders whose names will ever live on history's pages, to be eclipsed only by that of Napoleon, the man of destiny, who, as a military genius, stands alone and unrivalled: "Grand, gloomy, peculiar, he sat upon the throne, a sceptered hermit, wrapped in the solitude of his awful originality."

The mediæval ages gave us noble examples of devotedness and chivalry; but it belonged to the American republic, founded and defended by freedom's sons, to give to the world the noblest type of warrior; men in whom martial renown went hand in hand with the noblest of virtues, men who united in their own characters the highest military genius with the loftiest patriotism, the most daring courage with the gentlest courtesy, the most obstinate endurance with the utmost self-sacrifice, the genius of a Cæsar with the courage and purity of a Bayard.

Patriotism and love of liberty, the most ennobling motives that can fire the heart of man, expanding and thriving in the martial enthusiasm of free America, added a refining touch to the martial enthusiasm of our forefathers and elevated the character of the American soldier to a standard never attained by fighting men of any other age or nation.

To recall their names and recount their deeds would lead me far beyond the time and space allotted. Volumes would never do justice to the valorous achievements of George Washington and his compeers, the boys of '76—of the heroes of 1812 and of 1848; of the men in blue who fought under Grant, Sherman, Sheridan, Thomas and Farragut; of the men in gray who followed the lead of Johnston, Jackson, and Lee from 1861 to 1865; of the intrepid band that sailed with Dewey into Manila bay, or of the small but heroic army of 1898 that fought at Las Guasimas, El Caney, and San Juan, and left the stars and stripes floating in triumph over the last stronghold of Spain in the new world.

But above the grand heroic names immortalized by historian and poet shines with an undimmed luster, all its own, the immortal name of Robert Edmund Lee.

"Ah, Muse! You dare not claim
A nobler man than he—
Nor nobler man hath less of blame,
Nor blameless man hath purer name,
Nor purer name hath grander fame,
Nor fame—another Lee."

The late Benjamin H. Hill, of Georgia, in an address delivered at the time of General Lee's death, thus beautifully describes his character: "He was a foe without hate; a friend without treachery; a soldier without cruelty; a victor without oppression, and a victim without murmuring. He was a public officer without vices; a private citizen without wrong; a neighbor without reproach; a Christian without hypocrisy, and a man without guile. He was Cæsar without his ambition; Frederick without his tyranny; Napoleon without his selfishness, and Washington without his reward. He was an obedient authority as a servant, and royal in authority as a true king. He was gentle as a woman in life, and modest and pure as a virgin in thought; watchful as a Roman vestal in duty; submissive to law as Socrates, and grand in battle as Achilles!"

When in 1854, I found myself in the presence of Colonel Lee, who was then superintendent of the military academy at West Point, I have never in all my life seen another form or face which so impressed me, as embodying dignity, modesty,

kindness, and all the characteristics which indicate purity and nobility. While he was then only a captain and brevet colonel, he was so highly regarded by the army that it was generally conceded that he was the proper officer to succeed General Scott.

His wonderful career as a leader of the army of northern Virginia, as its commander, is so familiar to all that any comment would seem to be unnecessary. But to give some of the younger generation an idea of the magnitude of the struggle in which General Lee was the central and leading figure, I will call attention to the fact that in the battles of the Wilderness and Spottsylvania (which really should be called one battle), the killed and wounded in General Grant's army by the army under General Lee, was far greater than the aggregate killed and wounded in all the battles of all the wars fought by the English speaking people on this continent since the discovery of America by Columbus.

To be more explicit: take the killed and wounded in all the battles of the French and Indian war, take the aggregate killed and wounded in the Revolutionary war, take the aggregate killed and wounded in the war of 1812, take the aggregate killed and wounded in the Mexican war, take the aggregate killed and wounded in all our wars with the Indians, and they amount to less than the killed and wounded in Grant's army in the struggle from the Wilderness to Spottsylvania.

In order to further appreciate the magnitude of the struggle, let us make a comparison between the losses in some of the great battles of our Civil war, and those of some of the most famous battles of modern Europe. The official reports give the following as the losses in killed and wounded of the federal army in seven, out of nearly a thousand severely contested struggles during the four years of war: Seven Days' fight, 9,-291; Antietam, 11,426; Murfreesboro, 8,778; Gettysburg, 16,-426; Chickamauga, 10,906; Wilderness and Spottsylvania, 24,-481.

In the battle of Marengo, the French lost in killed and wounded, 4,700, the Austrians, 6,475. In the battle of Hohenlinden, the French loss in killed and wounded was 2,200, the Austrian loss was 5,000; at Austerlitz, the French loss was

9,000; at Waterloo, Wellington lost 9,061 in killed and wounded, Blucher lost 5,613, making the total loss of the allies, 14,674.

I mention these facts because such sanguinary conflicts as those of our Civil war could only have occurred when the soldiers of both contending armies were men of superb determination and courage. Such unquestioned prowess as this should be gratifying to all Americans, showing to the world as they did that the intrepid fortitude and courage of Americans have excelled that of any other people upon the earth. And as the world will extol the exhibition of these qualities by the soldiers that fought under Grant, the historian will find words inadequate to express his admiration of the superb heroism of the soldiers led by the intrepid Lee. Meeting a thoroughly organized, and trebly equipped and appointed army, they successfully grappled in deadly conflict with these tremendous odds, while civilization viewed with amazement this climax of unparalleled and unequal chivalry, surpassing in grandeur of action anything heretofore portrayed either in story or in song. Whence came these qualities? They were the product of southern chivalry, which two centuries had finally perfected. A chivalry which esteemed stainless honor as a priceless gem, and a knighthood which sought combat for honor's sake, generously yielding to an antagonist all possible advantage; the chivalry which taught southern youth to esteem life as nothing when honor was at stake, a chivalry which taught that the highest, noblest, and most exalted privilege of man was the defence of woman, family and country. It was this southern chivalry that formed such men as Lee and Stonewall Jackson; they were the central leading figures, but they were only prototypes of the soldiers whom they led.

THE ARMY IN THE SPANISH WAR.

BY JAMES E. STUART.

[James Edward Stuart, colonel 2nd regiment National Guard of Illinois, and post-officen ispector; born Forfar, Scotland, July 8, 1842; enlisted as private in 21st Wisconsin volunteers during the Civil war, and rose to the rank of captain; after muster became postal clerk, and in 1870 chief clerk of railway mail service of Iowa; post-office inspector in 1873, active in 2nd regiment I. N. G., has been successively captain, major and colonel; served in Cuba during the war with Spain, and afterwards organized the postal service of Porto Rico.]

Thirty years of peace, of hard work, and of great prosperity had passed since the American soldier, north or south, hung his old musket over the fire place as his most honored heirloom.

The world had seen and apparently forgotten the grand spectacle of a million veterans quickly and cheerfully returning to the paths of peace.

The scars of the great Civil war were fast being obliterated, the memories had become sweet and pure, the issues had gone into a dead past—the question of the unity of the nation, one and indivisible, had been carried to the court of last appeal, the supreme court of war, and the decision had been rendered. This decision was accepted in good faith by all the land.

Never again would the great republic call on its army to protect or to save. Too grand to know envy, too great to know fear, too large to know lust, the United States of America in all human wisdom could feel that its military archives were closed. Worn by a struggle the horror and hardship of which none escaped, the nation asked only for peace.

The small force of regulars had again been relegated to the position of care-takers, civil engineers, and Indian police, this last duty much simplified by the westward movement of the frontier, the increase of railroads and the disappearance of wild game upon which the untamed Indians subsisted.

There had grown up in America a new generation which knew not war, except as heard in the glamour of song and story.

The bitterness and sorrows of the war between the states were all buried in the hallowed graves of the heroes of the

struggle. The veterans still alive cherished only the memories of noble deeds and devotion to principles.

This new generation, lusty and strong in the fatness of the land, was devoting its strength and energy to the victories of peace. The great west offered a fair field in which to emulate the virtues of their sires, and the forest, the prairie and the mountain were the foe.

The old soldier in his coat of dingy blue or modest gray still kept ancient memories alive, still cherished the traditions and sacrifices, but he was passing away, dazed in the hurry and turmoil of trade and industry.

But peace is not altogether a blessing to a nation, thrive as it may. The captains of industry like the captains of war are prone to magnify their deeds, prone to feel that their standard of success is the only true measure of prosperity.

The world, ever willing to carp at the young republic, was all too ready to sneer at the apparent sordidness of America, forgetting or never knowing that the American dollar is to all in this fair land only a tool, not a god. The American heart, through all its busy years after the peace of 1865, beat as true as ever and it only needed a jolt to cause material ambitions to be laid aside, to drive the money changers from the temple, to show that industry was only a means to an end.

For many years the fair island of Cuba had been to all honest Americans a source of anxiety and sympathy. As long ago as the days of Thomas Jefferson, Cuba had been an object of interest and anxiety. Then the young republic was too new in the world, too weak, to be able to get a hearing in the court of nations. Later the fact that those Spanish colonies, as they broke away from Spain, abolished slavery within their borders, forced the United States as a slave holding power to look with disapproval on any attempts to gain their liberty on the part of the Cubans. This was all changed by the Civil war, and by the end of the century the republic, being no longer shackled and having waxed mighty, was ready and more than willing to aid the Cuban patriots.

The situation had become unbearable. Here at the gates of the land of the free was the last lingering relic, shriek-

ing in its agony, of the cruel tyranny of the most cruel colonizer in history.

Time and again had the wrongs of Cuba stirred the American heart. Time and again had Spanish duplicity enraged the American people. In 1873 the slaughter of American sailors—the Virginius affair—had nearly brought matters to the issue of war. But business was able to hold America back and to our disgrace gold was taken as the price of American blood. The generation of 1895 knew not this, the generation of 1860, exhausted by its own war, was cozzened into allowing a smear to be put on the American flag.

The sons of the men who fought the good fight, north and south, were now the men of the hour. The material successes of labor and trade were too familiar to be all in all to them; the reproaches of their sires, living and dead, were beginning to be heard above the clang of industry. Cuba's dying cry found willing ears and in spite of the shrieks of the self styled conservatives and the whines of the timid, America again called on her fighting men and they sprang to arms in a night.

The Spanish-American war was not caused by any one overt act—it was the drift of human events. Spain, robbing, starving, murdering in true medieval style, could no longer be tolerated as an American power. None but those blinded by greed or fear could fail to see that the American people were fast becoming heart-weary of the wrongs ostentatiously paraded at their gates. The government, although realizing the strength of the demand and the justness of the cause, used every effort to hold back the angry and outraged fighting blood of the land, more than aware as were those in authority of the state of unpreparedness of America; but it was of no avail.

Reports, made by intelligent and trustworthy American officials, of the rapacity, cruelty, starvation and incapacity, of the Spanish authorities were coming to America thick and fast. Protests and pleadings were all in vain.

Blinded by hate and rage the torch was waved, the defiance flung in our faces by fatuous Spain, steeped in the blood of centuries of rapine, and the good ship Maine sunk beneath

the waters of Havana bay. The dogs of war, long straining at the leash, were loosed with a snap and Spain was swept forever from the western seas.

In 1898 the American republic was in anything but a good situation as regards its armed forces. Never again a war was talked and believed in forum and council. Although every war in our history has shown and every American knew that the mainstay of a free people is its citizen soldiery, the national guard was, when not an object of malicious ridicule, at least a victim of neglect. It was only the innate love of war that kept the state military at even its modest strength. The lack of financial aid and even more the lack of appreciation had trimmed the so-called national guard—which was not national at all, but state—down to a few thousand enthusiasts who kept alive the sparks of active patriotism at almost their own expense, certainly with little hope of reward and even less direct hope of action. The regular army was so small that it never was considered as anything more than a nucleus; around this the real American army, the volunteers, could only be formed by utilizing the no more than a voluntary organization founded on the state muster rolls. Not only were the state regiments unavailable as such, but their arms and equipment were out of date and worse, their material and supplies nil. Efforts to interest congress in the guard regiments had met with uniform failure and the example of congress had been cheerfully and promptly followed by the various state legislatures. The result of this was that the country started to war with an army made up of a small force of regulars and a large mass of volunteers, fortunately fairly well drilled, but armed with archaic weapons and black powder.

The regular army had also suffered through neglect and had been allowed to sharply divide itself into two parts, the line and the general staff. The line was in very good shape, owing to the pressure of circumstance, the officers thoroughly educated and inspired by great traditions, the men of a high order of intelligence, well drilled and equipped. Service on the frontier had schooled the force in all of the minor operations of war and had also weeded out the incompetent and slothful, who had either retired to civil life or taken refuge in

the staff. Thus while the line was equal and more than equal to any demand, the staff early found itself hopelessly enmeshed in the red tape it had been weaving to its selfish advantage for thirty years. It is doubtful if any modern nation has ever known a more mortifying breakdown in its supply corps than that now experienced by America. Fortunately the war was so short and the military efforts of Spain so feeble that the outcome of the contest was never jeopardized nor even delayed by the confusion, and only the individual suffered. The operations of the forces were all successful and the American army showed itself as ever to be equal to its task, and lessons were learned that were beyond measure valuable. As a geographical proposition the war was essentially naval; apparently the only problem was to drive the Spaniards out of Cuba, after the sea should have been cleared. It was obviously impossible to transport an army across to Cuba as long as Spanish war vessels were liable to interfere. When Cervera was at last located at Santiago, this point and the surrounding country became the theater of war for land operations.

The problem was a simple one. An army was massed at Tampa and after several unfortunate staff delays and a false start due to a stampeded report of hostile vessels, the army sailed for Santiago. A believer in the god of battles can find in the uninterrupted voyage ample food for thought. Owing to poorly drawn contracts with the owners of the merchant vessels it was impossible to maintain any discipline in the fleet as regards maneuver, and this large number of transports straggled across from Florida open to attack and destruction by any small war vessels that might be able to slip out of Havana harbor and elude the American warships that were conveying the scattered and powerless steamers commanded by insubordinate and indifferent skippers. One torpedo boat of Spain could have destroyed the army of Santiago!

However, Spain had not this boat, and in due time the Americans arrived off the Cuban shores. No intelligent provision had been made for landing, but by ingenuity, daring and skill on the part of the troops, aided by the navy, in June, 1898, the Americans were on Cuban soil.

They were not well placed nor properly equipped and were

woefully deficient in artillery. Any but an American would have been in a very precarious position. The expected ally—the army of liberation of Cuba—proved almost a myth, became a joke and later a nuisance.

The aim of the American commander was to encircle Santiago, capture the city and the Spanish fleet now known to be there. Immediately upon effecting the landing, which met with small opposition on the part of the enemy, a base was established at Siboney, a small village on the coast, and steps were taken to surround the city. The Spaniards had a strong force available within the fortifications and another force of about eight thousand outside.

The obviously proper move was to take the forts at the mouth of the harbor. The naval commander desired this but General Shafter chose to do otherwise. Never was an American army, and seldom has the army of any nation, been called on to do as much as was demanded of the army of Santiago. With a supply corps that did not supply, this small force of 12,000 fighting Americans, white, red and black, men from the east, west, north, and south, proceeded to perform one of the most remarkable feats in the history of warfare.

The Spaniards were rapidly intrenching on the hills of El Caney and San Juan and, while their rations and uniforms were worse than poor, their arms and supplies of ammunition were good. The Spaniard soldier is a poor fighter, but a brave man. Behind intrenchments he is good and according to all the rules of war, as the Americans had almost no heavy guns, the Spanish position could not be taken and fever and disease would do the rest. Fever and disease did do it by forcing the Americans to fight or die. The subordinate commanders, the line officers and the men had no doubt of their ability to take the hills, although it was known by every foreign military attache that it could not be done. But the cost! Every sixth man down. Had any intelligent provision been made, had any of the simplest precautions been taken, while the result could have been no better, many a brave American sleeping under the palms would have been alive to-day.

Fortunately for the outcome of the Santiago campaign the solution of the problem was very simple. Take the hills

and the city falls. The American fighters took them as their sires took the hills from 1776 to 1865.

The first fight of any moment was at Guanimas, where the rough riders and the black regulars pushed through the tropical woods, the left of the line. The struggle was one calling for the best in a soldier. The heavy and thick growth of timber precluded plankers or scouts and effectually concealed the enemy, affording them every advantage. It was no ambush or surprise, as has been said by ignorance or malice. It was known that the Spaniards were there in force and must be driven out. How many there were was not known and was not a question apparently of much importance. The Americans at a heavy cost pushed through, fighting a series of individual combats, for the commanders could not keep in touch, and the enemy driven in at every point fell back into their intrenchments nearer the city.

There is little doubt that had the American commander pushed ahead for Santiago immediately on landing, as the navy advised, the fight at Guanimas would have ended the campaign.

The fortifications and obstacles which cost so many lives at El Caney and San Juan were practically all built after Guanimas. No effort on the part of the Americans was made to prevent this nor was there any systematic attempt to obtain knowledge of the ground in front, or open trails over this ground. General Chaffee on his own responsibility scouted the ground in his front and seems to have been the only general who did.

The fights for El Caney and San Juan hills were a series of rushes and charges. Tactics and strategy were nothing, courage and initiative the whole affair.

The only plan made was not carried out on account of its taking longer to secure control of El Caney than had been anticipated. Both hills were taken at a heavy price, so heavy that it was doubted whether or not the Americans could keep what they had secured. For some days it seemed impossible that the Americans could successfully resist an attempt by the Spaniards to retake the line of intrenchments. That is, it was

doubtful in the minds of the scientific soldier. There was no question in the minds of the American fighting line.

The destruction of the Spanish fleet and the arrival of General Miles put a new aspect on affairs and the campaign of Santiago was over.

The Americans then turned their attention to Porto Rico. This rich island, while never so oppressed as Cuba, was also a victim of the Spaniard and crying aloud for succor. General Miles, with a well equipped and skillfully commanded force of regulars and volunteers, sailed for Porto Rico in July.

The expedition had several advantages for the Americans over the one which sailed from Tampa in June for Cuba. Miles was not obliged to land at a given point. He had a definite plan. He did not proclaim it in the newspapers. He was not hampered by the staff, in fact he practically dispensed with it and wisely looked to the navy to act in this capacity.

While the world was awaiting the news of the landing and investment of San Juan, the capital of the island, the Americans reported the capture of Ponce de Leon, the city of next importance on the island, after the capital.

From Ponce, having thus taken the enemy in the rear as it were, General Miles planned and carried out a masterful campaign, with the cordial encouragement of the natives, and had the island practically won when hostilities were suspended.

The two campaigns, Santiago and Porto Rico, stand out in sharp contrast. The one showing what the American army can do in spite of mismanagement; the other how well it works when skillfully handled. It is the sarcasm of fate that had General Miles made a blunder or two and then allowed his men to win a bloody battle, he would have stood in history among the great warriors.

The army was called upon, during the war, for very little in the Philippines. The Spanish were cooped up in the city of Manila and Dewey's victory sealed their doom. It was more a problem of diplomacy than war that confronted the army and the fighting there was almost perfunctory, to save "Spanish honor."

The final capture of Manila, aided by the navy, was notable in that so much was done from a political standpoint,

with so little suffering to non-combatants. It is a monument to the coolness and forbearance of the American soldier.

Although the Spanish-American war was so brief and the numbers engaged comparatively few, the consequences were mighty. This war will ever stand out in history as will no other. Nations and peoples have fought for life, for freedom, for loot, for land, for glory, but never before was a war fought for charity. The Spaniards had nothing America wanted enough to pay one drop of blood for. Spain had long ceased to be a menace. The whole world could not be a menace. The American people fought the Spanish war because they had decided that wrong should cease in their continent. They asked no price of the Cubans, they demanded no indemnity of Spain. They fought from pure motives, they came out without a stain.

Again the American army found the result of a war greater than could have been dreamed. Although the Americans knew it not, the great republic still lacked one thing in the world. The republic had fought to be free. It had fought to be united. Now it had fought to be respected. The war surprised those at home almost as much as it did the world. It was suddenly realized that America was great and powerful as well as big and rich. Henceforth America was at the head of the world's council board, as mighty as the mightiest. And to attain this by an unselfish war, by a struggle with no aftermath of hate—verily America had come into her heritage.

Of the minor results of the war the acquisition of alien lands and wild people was not the least. A long apprenticeship in handling the American Indian, the most intelligent savage in the world, had prepared her statesmen for the problem. Other nations offered prompt advice and prompter criticism, but being based not on altruism, but exploitation, it was not taken, and well it is that it was not.

The delays, hardships and deaths in the war, cruel as they were, taught, and it seems well taught the need of preparation. No nation, not even America, is sure of continual peace, and now it is known of all men that this is true. The next war will not find the American army shackled by relics, hampered by theorists and choked by incompetents.

Greater than freeing the Cubans, greater than showing that the American is still the greatest fighter in the world, greater than winning the awe and respect of all men, greater than raising wild peoples, greater than all of these is the fact, only in after years to be fully recognized, that the Spanish war crushed out of America the worship of things only material.

The bitter experience of every soldier, other than from a hostile bullet, was due to the follies and selfishness of those who put personal ambition and money success above the flag. Not a boy who languished in the trenches, not an observer who saw suffering that should never have been, but came home and told the reason why. They brought the leaven and slowly but surely the idea grew that honesty and honor can not be bought, cannot thrive, cannot even live under the false gods who had crowded into the American pantheon. Inefficiency, dishonesty, peculation, selfishness, all these killed men in Cuba. The bitter hatred of these, our nearest foes, would not down and from this feeling grew and waxed strong the demand for civic honesty and personal integrity in all of our servants.

The army of the Spanish war, while it knew not, realizes it not to this day, fought and gave the death blow to the greatest danger the American republic has ever faced, the danger that has killed every dead republic in the archives of time.

The most dangerous, the most cruel, the most insidious foe was chased out of his lair at Santiago, done to death in the jungles of the Philippines. No longer in America does the thief and the robber lead, no longer is the gross above the good. Gold covers no sins, wealth alone commands no respect.

Honor, patriotism and charity again are on our standard.

This is what the American army did.

THE ARMY IN THE PHILIPPINES.

BY LUKE E. WRIGHT.

[Luke E. Wright, governor general of the Philippines; born in Tennessee, 1847; practiced law in Memphis, and for eight years was attorney general of Tennessee; active in relief measures during the yellow fever epidemic of 1878; was appointed a member of the United States Philippine commission in 1900, and although a democrat, he was appointed president of the commission by President Roosevelt, 1903.]

The insurrection against Spain, which began in 1896 and was afterwards continued against the United States, finally developing into a guerrilla warfare, caused widespread demoralization among the mass of the people,and as a result ladronism greatly increased. After the collapse of the insurrection and after all organized opposition to our authority had ceased the great mass of the people resumed their ordinary and peaceful vocations, but they continued to suffer from the depredations of numerous bands of ladrones, who not infrequently were commanded by some veteran outlaw whose career extended back to Spanish times. It was obviously necessary that these bands should be exterminated before it would be possible for the people to live in safety in their homes or to till their fields; hence, at an early day after the establishment of civil government, the Philippines constabulary, composed of natives commanded as a rule by American officers, was organized and began operations against them with most satisfactory results.

These predatory bands as a rule contented themselves with preying upon their own people, often killing or mutilating those who refused them assistance or were supposed to be unfriendly to them. Sometimes, as a measure of protection, the unfortunate people who were exposed to their depredations would compound with them by furnishing them food and information, which would enable them to elude the constabulary, but as a general rule the people lived in deadly fear of them, and with good reason. As the people came to understand that the government had both the will and the ability to protect them they began to co-operate cordially with the constabulary and

other peace officers by giving information against these cutthroats, so that it became possible to kill or capture them. As a result of the persistent efforts of the constabulary thus aided by the people there is to-day in the great island of Luzon not a single organized band of ladrones to be found. Nearly all of the leaders save five or six have been killed or captured, and those still at large are in hiding and practically without followers. What has been said as to Luzon is also applicable to the Visayan islands, with the single exception of Samar.

There is no reason to suppose that the orderly and peaceful conditions which at present exist will be otherwise than permanent.

However, in order to get a true picture of the situation as it actually is, it is proper to remark that the Philippine islands are all of volcanic origin, that their centers are mountainous and covered with a heavy growth of timber and other vegetation, and are generally difficult of access. The great bulk of the civilized Filipinos live on or not remote from the coast line, but there are scattered communities living in the mountains who come little in touch with civilizing influences, who are densely ignorant and superstitious, and who, indeed, in many instances are little removed from savagery. It frequently happens that some enterprising man among them who has the elements of leadership, by exciting their cupidity or playing upon their supersititions, will obtain a considerable following and will perpetrate all sorts of outrages upon the peaceful and inoffensive inhabitants within his reach. It is hardly fair to presume that the inclinations and habits of semibarbarous marauders of this description can at once be changed. They must first be reached through their fear of consequences and made to understand that their traditional manner of life is neither safe nor profitable, and thereafter they may gradually be brought into a decent and orderly manner of living. It may therefore be inferred that for several years to come there will be irruptions from this source and that they will make raids upon the civilized Filipinos living in the lowlands as heretofore, so long as a tempting field for their incursions is offered them. The government, so far as its finances permit, is engaged in building

roads to open up these remote sections of the interior and to make them accessible.

A striking instance of the tendencies of these mountaineers is furnished by recent occurrences in the island of Samar, which is the third in point of size in the archipelago. In 1904 several hundred of these hillmen who lived about the headwaters of the Gandara river, under the leadership of one of their number who styles himself Papa (pope) Bulan and who, as is usually the case, claims to be divinely inspired and to have the miraculous power of conferring invulnerability upon his followers, suddenly descended upon the natives along the coast line, plundered and burned the outlying barrios, and began killing men, women and children indiscriminately. The constabulary of the province promptly took the field against them and were rapidly reinforced by constabulary and scouts from other provinces. As a result of the operations against these pulahanes, as they are termed by the natives, they were soon broken up into small bands and are being pursued and killed or captured. Careful inquiry has been made, to ascertain, if possible, whether there was any special motive for this outbreak. Some of the captured members of the band, upon being questioned, state that the immediate cause was that certain of their countrymen, who were prominent in the insurrection and who have been employed by mercantile houses as agents for the purchase of hemp, had oppressed them by paying them only a nominal price for their hemp, thereafter turning it in to their principals at a much larger price. There is no special significance in this incident except in so far as it illustrates the low intelligence and semi-barbarous condition of many of the inhabitants of the mountains of Samar and of some of the other islands of the archipelago. The Spaniards impressed themselves less, perhaps, upon the people of Samar than upon the inhabitants of the other islands, and except Mindanao, the home of the Moros, there is therefore more combustible material there than in the other islands. Doubtless many of the inhabitants of these mountain regions who are completely isolated from the outside world have never seen a white man. It may be well also to mention that the civilized Filipinos are in great terror of them,

and eagerly co-operate, so far as their fears will permit, with the constabulary and scouts in their elimination.

The relations between Americans and Filipinos, we are glad to be able to say, are generally cordial, and there continues a steady growth of confidence and good feeling between them. This has been contributed to by the best elements of both races. The bitterness and distrust, which were the natural outgrowth of the insurrection and its events, have largely disappeared. With but few exceptions, the Filipinos of education, intelligence, and property have heartily co-operated with the authorities; and this remark applies both to those who have been in official relations with the government and to those in private life. Here and there is found a Filipino of more or less importance who is still irreconcilable and hostile to American authority, and occasionally an American who dislikes and distrusts all Filipinos, but the number of such men is comparatively few and their influence is small and steadily waning. All those who are justly entitled to be called leaders of public opinion among the Filipinos have definitely cast their lot with the Americans, and have expressed themselves as content to leave their fortune and their future to the American people.

It is true that what is known as the Hongkong junta, composed of a few Filipinos, some of whom in the past have been men of considerable local prominence, from time to time during the year has given feeble evidences of life and antagonism. They have endeavored, from the safe distance of Hongkong, by correspondence and through emissaries, to stir up trouble and to keep alive the dying embers of insurrection. One of their number, Artemio Ricarte by name, who styled himself the Viper, came from Hongkong to Manila sometime in December, 1903, for the purpose of organizing another insurrection. He was one of the irreconcilables who was deported to Guam and later brought back to Manila with other prisoners from that island, but upon refusing to take the oath of allegiance was not permitted to land and went to Hongkong. After reaching Hongkong he became one of the leaders of the junta, and under his inspiration they began preparations looking to an outbreak in the islands. To that end he opened up a correspondence with a large number of persons who had been more

or less prominent in the former insurrection. Many of those who received his letters promptly turned them over to the authorities and disavowed any connection with him. Ricarte came clandestinely to Manila, having with him a trunk full of blank commissions, proclamations, and other revolutionary literature. He at once began operations in co-operation with a crack-brained playwright by the name of Tolentino, who had written a number of seditious plays. Ricarte dubbed himself generalissimo of the forces in the field, and Tolentino dictator, and the two began busily filling in commissions and distributing them to a number of irresponsible young men about Manila. These commissions, together with their holders, were soon picked up by the police force, and, so far as ascertained, no commission was issued to any one below the rank of general.

Ricarte thereafter made a secret tour through several of the provinces of northern Luzon, but found, to his astonishment, that he was unable to make any headway in recruiting his forces, as the people were deaf to his appeals. He did, however, succeed in corrupting a corporal of constabulary, who had formerly served under him during the insurrection, and the members of his detachment, which was temporarily stationed in the province of Pampanga, although it belonged to the constabulary of the province of Ilocos Sur. Shortly after having seen Ricarte, this corporal with his detachment returned to Vigan, the capital of Ilocos Sur, and while on guard at the constabulary barracks seized them and thereby secured a number of guns. He liberated the prisoners in the jail, armed them, and left the town with his detachment. He was at once pursued by the constabulary and scouts, upon whose approach his party dispersed, but were picked up one by one until all were finally captured without resistance.

In the meantime Ricarte returned to the neighborhood of Manila, and for several months made every effort to secure recruits to his cause, but without success, and was captured finally at Mariveles, in the province of Bataan, by a constabulary officer, upon information furnished by the municipal president of Mariveles and the clerk of the court of that province. It was believed at the time that he was endeavoring to escape to Hongkong. Tolentino was soon picked up also.

The entire episode was ridiculous and was of no importance, save that it demonstrated that Ricarte had no sympathizers or followers either among the prominent Filipinos or among the people, and was a reassuring bit of evidence of their loyalty and good sense.

In dealing with existing conditions as to peace and order it is proper to give separate consideration to the Moro province, which includes all the great island of Mindanao except the two Christian Filipino provinces of Misamis and Surigao, on the north coast, and also includes the Sulu archipelago. With the exception of some 66,000 Filipinos, generally the descendants of convicts deported by the Spaniards from the northern islands, the great area of territory embraced in the Moro province is inhabited by Moros, who profess the Mohammedan religion, and by a number of other non-Christian tribes. There has never been any accurate census taken of the non-Christian population, but from the best sources of information available it is estimated at somewhat less than half a million souls, of which the Moros number about 150,000. Although the Moros were always nominally under the sovereignty of the Spaniards, the latter, as a matter of fact, never exercised any real control over them, contenting themselves with maintaining a few military posts upon or near the coast and from time to time making feeble attempts to bring them into a state of submission, but without any considerable success. Several years before the outbreak of the Spanish war General Weyler, then governor general of the islands, conducted a military expedition on quite an extensive scale against the Moros of the Lake Lanao region and succeeded in establishing a military post upon the shores of the lake and in floating two or three small armed launches upon its waters.

Thus matters stood at the time of American occupation in the summer of 1898. Soon after the cession of the Philippine islands to the United States by the treaty of Paris, hostilities began between the insurgent forces and the American troops in the island of Luzon and in the Visayas, which demanded our entire attention. In the meantime the Spaniards withdrew all their troops from Mindanao. As soon as this withdrawal occurred the coast Moros immediately occupied the

posts thus abandoned and their petty chiefs began business on their own account, cruelly maltreating and oppressing the Christian Filipinos, who were comparatively few in number and unable or unwilling to resist. Major General Otis, commanding the American forces and military governor of the islands, sent an expedition commanded by Brig. Gen. John C. Bates to look after matters in Mindanao and the Sulu group in the summer of 1899. At this time little was known of the Moros, save that they professed the Mohammedan religion and were a warlike people who had always resisted the domination of Spain. It was therefore deemed advisable to do no more than to reoccupy the military posts along the coast, which was done without opposition during the latter part of 1899. General Bates entered into a treaty with the sultan of Sulu by which the latter recognized the paramount sovereignty of the United States, but it was agreed tht he was not to be interfered with in the direct government of his people, and a modus vivendi was established between him and the Americans. The authority of the sultan of Sulu embraced only the islands of the Sulu archipelago and did not extend beyond them, being in no way recognized by the inhabitants of the island of Mindanao, in which are found at least two thirds of the Moro population. The attention of both the military governor and the civil authorities who succeeded him was for several years thereafter primarily devoted to the suppression of insurrection and the establishment of civil government among the Filipino peoples of the northern islands, and in the meantime nothing of importance was done toward bringing the inhabitants of the Moro province under American control.

So long as the American troops contented themselves with remaining at their stations upon the coast and pursued a policy of noninterference with the affairs of the Moros there was no clash between them; but even during this period there was an occasional attack by Moros upon American outposts, and it was well understood that none of our troops would be permitted to penetrate into the interior of the islands without opposition. The Lake Lanao Moros were especially resentful of any intrusion upon their isolation, and their chieftains explicitly stated that Americans would not be permitted to enter their

territory. When, in the summer of 1902, a small detachment of cavalry was sent from the military post of Parang, on the south coast of Mindanao, with orders to explore the trail leading to the lake, they were promptly attacked by the Moros and several of their number killed. This required action, and a column of several hundred men was promptly pushed forward to Lake Lanao, meeting with fierce resistance. About the same time a detachment of our troops was pushed forward from Iligan, on the north side of the island, into the northern end of the Lake Lanao region. This also met with fierce resistance from the Moros. The region around the lake which seems to be the crater of a great extinct volcano, was found to contain a considerable population, although not nearly as large as was supposed. The people were broken up into small tribes, governed by petty chiefs, or datos, as they were called, more or less jealous of and hostile toward each other, but all inclined to make common cause against the foreign intruder. At this time no attempt was made to bring them into submission and the military authorities contented themselves with establishing two posts, one at each end of the lake, and each having a line of communication to the sea, on the north and south, respectively. For nearly a year thereafter military operations were suspended and efforts were made to establish friendly relations with the chiefs and the inhabitants generally, but with little success. Investigations were made and data collected, as well as could be done under these adverse conditions, as to the customs, habits, and characteristics of the Moros and other non-Christian tribes, how far they had progressed in civilization, and the nature and extent of their various tribal governments, with a view to determining the best method of dealing with them. The alternative was presented of recognizing one or more of their principal datos and nominally governing the people through him or them, having at their sides American residents to advise and direct, or to impose some form of government directly by Americans, utilizing their datos as administrative agents so far as practicable.

The English, in dealing with the Malays of the Straits settlements, where the population is practically the same as that inhabiting the Sulu archipelago and Mindanao, had adopt-

ed the former method, but there the English had found a few sultans or chiefs whose authority was recognized by the people. The situation in the Moro province, as already explained, was very different. The population was found to be under the government of a multitude of petty datos, the greatest of whom could scarcely muster 1,000 men. Each of them had with his following built a fort, called a cotta, of more or less strength, in and around which he and his followers lived and within which they took refuge when attack was threatened. All of them had indulged for generations, perhaps for centuries, in petty feuds and tribal wars each against the other, so that there was no man among them who had any extensive authority or moral force. Even as to the sultan of Sulu it was found upon investigation that whilst he was nominally recognized as the titular head of the Moros in the Sulu archipelago, in reality there were several of his datos who possessed as much authority as he and who recognized or repudiated his sovereignty from time to time as suited their pleasure, and for several years past there had been an active feud on between him and two of his recalcitrant datos. The Moros inhabiting the island of Mindanao, who constitute two thirds of their total number, did not recognize the authority of the sultan of Sulu and derided the idea that he had any jurisdiction over them, and he has never attempted to exercise any sovereign rights or authority, although it is believed that he claims in a vague way to be sultan of all the Moros.

After careful consideration of the whole subject the commission reached the conclusion that it was best to establish a provincial government for the Moros, modeled, so far as related to the chief executive offices, upon the general lines followed in establishing provincial governments for the Christian Filipinos, giving to it large legislative authority, including the power to create local governments or to change inferior ones to suit the actual needs of those affected thereby. Accordingly the commission on June 1, 1903, enacted Act No. 787, organizing the Moro Province. In drafting this act Governor Taft and his colleagues had the benefit of the advice and assistance of Maj. Gen. Geo. W. Davis, who for nearly two years had been in command of the troops stationed in the Moro

province and had given much thought and study to the conditions there prevailing. The commission did the best it could toward solving a very difficult and complex problem. It was recognized that any effort in the direction of establishing government among the Moros must in the nature of things be tentative and experimental, and that in all probability it would be necessary subsequently to modify any government established. It was not deemed wise or just, except to the extent absolutely necessary, to impose upon them the system of laws and of administration of justice which was well adapted to the Christian Filipinos, but which must prove burdensome and odious to them. Moreover, it was understood in a general way from the limited sources of information available that they had a crude system of tribal laws and customs administered by their datos and priests, who were termed panditas. The Moro act, therefore, provided for a governor and a legislative council which was given large legislative powers, and created certain necessary executive offices. Provision was made for the establishment of a public school system, and also for the creation of a constabulary force to be composed of Moros commanded by white officers under the direction of an assistant chief of constabulary. The province was divided into five great districts, each presided over by a district governor under the general administrative direction of the provincial governor. It was also provided that the customary laws of the Moros should be collected and codified with such modifications as the legislative council might think necessary, and that as thus amended and codified they should control and govern in all civil and criminal actions arising between Moros, other provisions being made for the trial of causes between Moros and other non-Christian tribes and between Moros and Christians. The legislative council was also authorized to create district courts to be presided over by district secretaries and to be composed in part of Moros.

The government of the Moro province was organized immediately after the passage of said act, and Brig. Gen. Leonard Wood, U. S. army, commanding department of Mindanao, was appointed provincial governor, and the various other important executive and legislative offices were filled.

The duties thus imposed upon the governor and legislative council called for the exercise of great judgment, tact, forbearance, and high constructive ability. The Moros were proud, suspicious, and fanatical. From time immemorial they had practiced polygamy; they had been accustomed to make raids upon other non-Christian tribes for the purpose of replenishing their stock of slaves; the coast Moros had always made a business of piracy, which, at a not very remote period, had been carried on quite extensively against the northern islands inhabited by the Christian Filipinos; they had been taught by the Arabs, with whom they had always maintained a loose connection through their religion, the use of firearms, of which they possessed great numbers, generally of mediæval pattern; they had also been taught how to make gunpowder, and they had considerable skill as workers in iron. They also had a fair knowledge of agriculture, and their women exhibited considerable skill in weaving cloth from native fibers. They gathered gums and gutta-percha from the forests, and exchanged their products generally by a system of barter with the Chinese merchants who had settled in the various towns along the coast. They were fairly industrious, appreciated the value of money, and were shrewd traders. General Wood began by organizing the various districts provided for by the Moro act, and attempted in every way to establish intimate and friendly relations with the Moros and other non-Christian tribes of the province. The latter are a timid people, disposed to be suspicious of strangers, but inclined to be friendly when they understand that no harm is intended them, who have sought to find protection against Moro oppression by secluding themselves in the forests. These poor and inoffensive creatures, as soon as they understood that the Americans would protect them against their ancient enemy, the Moros, were only too willing to recognize our authority and receive the benefits of our protection. They are not lacking in intelligence and appreciate kind treatment. In a number of instances they have been induced by the district governors and other officials to establish themselves in villages and to cultivate the soil adjacent thereto. These villages are steadily increasing in population as the people find themselves secure in life and prop-

erty. Schools have been established among them in which English is taught, and they appear contented and prosperous.

The Moros did not take kindly to the new order of things, which was distasteful to them in every respect. They resented any interference with their customs or habits of life and regarded the appearance of the white man in their villages as an unwarranted and offensive intrusion. This was generally true of all the Moros, and especially so of those inhabiting the Lanao district. The promulgation of the laws against slavery and the protection of escaped slaves from recapture were regarded by their chiefs and head men as an unwarranted invasion of their vested rights and was deeply resented. Besides, these datos and head men, who practically exercised the power of life and death over their people, were unwilling to abdicate their powers and become subordinate to any superior authority. The governor of the Moro province and his subordinate officials pursued a conservative course and endeavored to win the confidence of the chiefs and to convince them of the advantages of a settled and orderly government, and were fairly successful in their efforts so far as related to the coast Moros, who, as a rule, understood that by reason of the ease with which they could be reached by American troops resistance was futile; but the Lanao Moros were not so easily convinced and persisted in continuing to maintain an attitude of uncompromising hostility. Although they would frequently come in considerable numbers into the American army posts established in their territory, for the purpose of selling their produce, and would express themselves on such occasions as friendly, it was well understood and often announced that they would not permit Americans to come among them, and, to emphasize this fact, they frequently made night attacks on the pickets about these posts.

After all effort to establish friendly relations had failed, it was deemed necessary to bring matters to a head with them and end a situation which was felt to be impossible of continuance. General Wood, therefore, sent out expeditions to march along the shores of the lake, which were immediately attacked; and, thereupon, assuming the aggressive, he reduced several of their cottas and gave them a salutary and much needed lesson.

THE ARMY SINCE THE WAR WITH SPAIN.

BY CELWYN E. HAMPTON.

[Celwyn E. Hampton, captain United States army; born in Ohio, March 1, 1871; graduated from the Ohio Normal university; entered the United States Military academy in 1890 and upon graduation was appointed second lieutenant in the 23rd infantry, 1896; became first lieutenant 1898, and captain in the 2nd infantry, 1901; has been a close student of military science and history and is a contributor to military journals.]

In order to intelligibly discuss the conclusions and the benefits to the army that are to be derived from our experiences during the Spanish-American war, it appears to me well to revert, first, to the conditions that developed at its inception and during its progress merely as matters of fact; second, to enumerate the primary and most important things learned from these developments either by the army itself or by the people at large, together with some results already achieved; third, to state what will, apparently, be the results, in the near future, from the awakening or reawakening to realization of our military weakness, judging from past experience and present tendencies; fourth, to point out some of the lessons yet to be learned by or, at least, to be solved by the army for the benefit of our service and the people, proposing, briefly, some solutions for these problems.

To the army it was no discovery that at the outbreak of the war we had not sufficient force of either officers or enlisted men with which to prosecute it, or that our organization was faulty and unfit to withstand the strains of active service. Neither was it any secret, for the army had been, for years, proclaiming its belief, producing arguments and proofs to show that these weaknesses existed, and insisting, in the modest way in which our military arm must always work, that its numbers were totally inadequate and its organization obsolete, rendering difficult the carrying on of its work, even considered only as that of a highly trained nucleus in peace times. In spite of some boasting, in the early days, that one American soldier was equal to ten Spanish and that 15,000 troops were an abundant force for the quick reduction of Havana, it may be said that the first act of hostilities served to show the country a por-

tion of the fallacy to which it had clung by failing to heed the warnings of its soldiers in the years past. Later, the threatened descent of a Spanish force upon our eastern seaboard, ludicrous as it now appears, in the light of subsequent events, produced a condition of panic fear in a section of the country where I had heard men of intelligence and public standing declare, two years before, that the American people, rising en masse, armed only with scythes, could beat back any foreign invasion that might ever be made. Under the driving force of necessity, therefore, the belated increase and reorganization of the army began. It is needless to use space here to describe the condition that resulted, further than to say what the army saw then, that attempted reorganization after war begins produces a state that would be better described as disorganization.

Depending, as always, upon volunteer levies for the main strength of the large army required, the organization of these forces began in the greatest possible haste, and developed all the well known weaknesses inseparable from such a system. Men absolutely untrained and inexperienced in matters relating to the profession of arms were commanded, mainly, by officers as untrained and inexperienced as themselves. It was recognized that a leavening of regular officers should be added to this force, but so keen is the civilian to preserve his right to exercise military command upon opportunity that congress was called upon to pass, and did pass, a law limiting the number of regular officers that could be used with volunteer troops to two per regiment. Even this small number could not obtain places, so great was the objection made to their use and, consequently, the leavening process was almost inappreciable. Furthermore, the addition of these regular officers was made in so irregular a manner, owing to a total lack of all previous plans for their advancement, that two anomalous and weakening conditions at once developed. First, nearly all fell under the command of civilian volunteer officers. Second, these promotions and appointments, being made by favor of one kind or another, young subalterns of perhaps only a few months' service, were frequently jumped into comparatively high command rank, while officers of long service,

experience and really tried ability suddenly found themselves junior in rank to and actually serving under youngsters who had barely begun their novitiate in the high calling of arms. When the natural disappointment at the passing of what might be truthfully considered their lawful occasions had somewhat subsided, officers of the regular army began to find that it was perhaps well for their organizations that no more were taken for this purpose, because the number with troops became so depleted, from various causes, that, considering the influx of recruits to the ranks and the reorganization muddles, the efficiency of the army began to be seriously impaired.

The national guard had formerly looked upon itself as in the forefront of forces prepared for filling honorable positions in war time, but when need came, they were not found to be fitted and, after many furious controversies, were entirely disregarded.

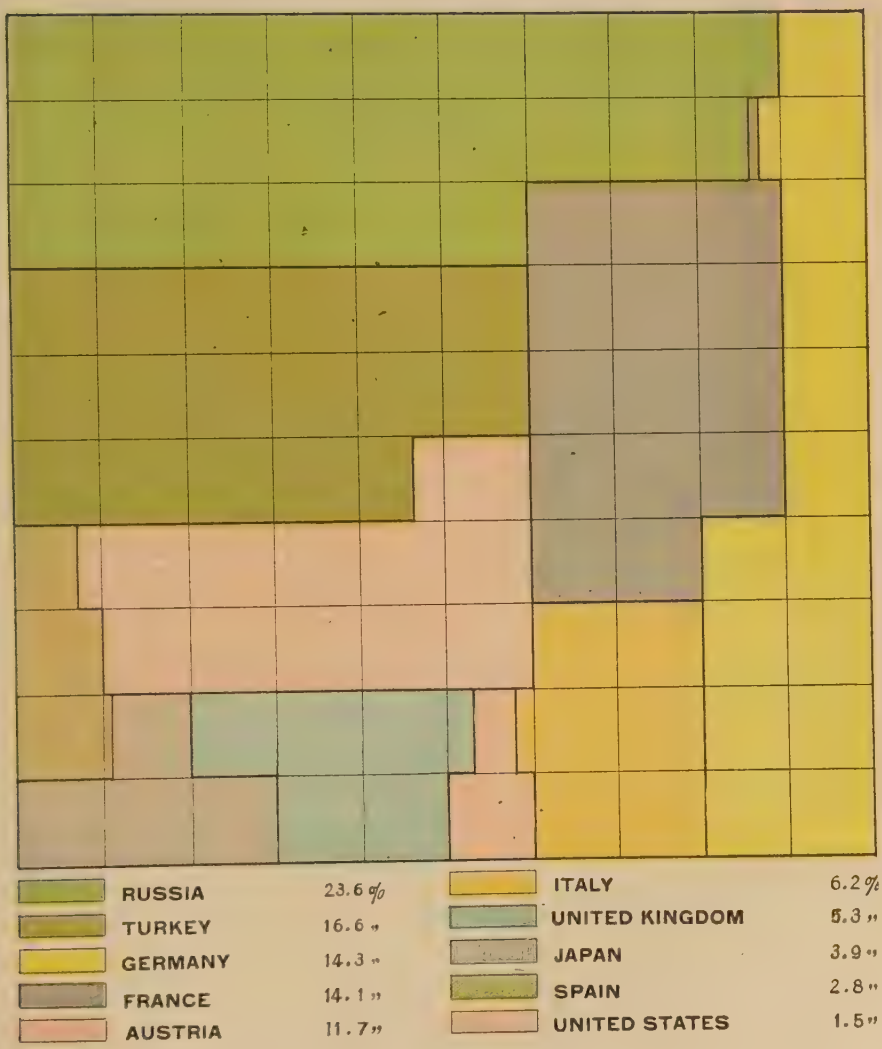
The regular army was looked upon as a force which, though small, was in the highest state of training and efficiency. So far as concerned the interior economy of the army under its peace organization, this was true enough. But to meet its expanded state and its supposed readiness for war, it was not true. Mainly the fault for its unpreparedness must be laid at the door of congress—that is, of the people themselves. The latter are ever prone to disregard the advice of purely military men and to prefer ideas of easy faith in the future; while congress cared more for a record of economy, which was popular where military matters were concerned, than for the careful provision demanded by wise forethought. Guns and ammunition for the artillery had not been provided, either of sufficient quantity or of modern character. We possessed a good small-arm rifle, but not in anything like the numbers required to equip the force we proposed to raise. The bulk of our army, therefore, prepared to take the field armed with an obsolete and antiquated weapon, using ammunition totally unfitted for modern conditions. Before the war was over, it even began to be suspected that our best was inferior to the arm of the enemy against whom we were pitted. Stores of proper clothing and food were not at hand, and plans for their acquisition had not been made. Plans for the transpor-

MILITARY STRENGTH

COMPARATIVE SIZES

ARMIES OF THE WORLD ON PEACE FOOTING

EACH SQUARE REPRESENTS 1% OF THE WORLD'S MILITARY STRENGTH



tation, mobilization and encampment of the forces had not been provided and those hastily decided upon often broke down under the strain imposed upon them. For a part of these deficiencies the army itself was not entirely blameless. Another weak point in the army, which soon resulted in a fracture, was in the supply and administrative departments. Under the system then existing the officers of those departments were appointed for a permanent tenure. Whether true or not, the rest of the army generally considered that these appointments were made as the result of favor and influence. At any rate the departments were very close corporations and the officers of the line were prevented from acquiring much knowledge of their workings. Between the line and the departments there was little or no sympathy. Although there could be no doubt that the departments were created for the purpose of serving the line of the army, that object had long been lost sight of, and the departments had grown seldom to seek the advice or consider the needs of the line. Great stress was laid on the value of long tenures in having made experts of their officers and on the consequent impossibility of displacing or replacing them. Nevertheless, when war became certain, large numbers of these officers, seeing greater individual glory and gain in service with the troops, sought to return, and many did return, to the line with all the advantage that whatever influence might have accrued to them could give. Thereby officers of the line were shut out from positions that they had hoped and believed themselves entitled to fill, while the departments, which should have been awake and alert and straining every fiber to equip and care for the army in the field, were crippled by these withdrawals from their ranks of officers who claimed to be, and doubtless were, experts in the work they were now leaving to be performed by officers of the line with little previous experience, and by civilian appointees with absolutely none. Among the acts of army officers perhaps none were considered by the army to be more reprehensible than this.

Finally, under numerous handicaps, thus imposed, month after month was frittered away and lost in attempting to com-

plete the necessary reorganization and training before the army could take the field.

From these experiences a number of lessons have been more or less well learned, either by the army alone or by the army and the people at large. Among these the first to be made so plainly evident that it could not be evaded was that we needed a more numerous army. Hence there came about a permanent increase in the force.

It was seen that plans must be made and organization completed, as far as possible, before the opening of a war, and for this purpose, mainly, we have created a general staff. Further, it was demonstrated that the old volunteer system is ineffective for ready use. The national guard must be put upon an entirely new basis. Material for an army at probable war strength must be provided beforehand and kept well up to date. Plans and practice are needed in transporting, mobilizing, camping, subsisting and handling troops in large numbers. Some of this is now being accomplished in the annual maneuver camps.

There should be as wide as possible a dissemination of knowledge pertaining to the proper conduct of the supply and administrative departments throughout the army. For this reason the detail system has been inaugurated and is now in operation. These departments require a real devotion to duty of the officers serving in them, and must not be crippled by their withdrawal in war time, in any case not manifestly for the greater good of the service. The army should not be prostituted to pay the debts and favors of any political party or person. Time must not be wasted in training after war begins, when it is in any way possible for training to be finished before. Admitting, now, that certain things were found to be true, and that, from these, certain lessons have been learned, it will be well to inquire how deep and lasting are the impressions these lessons have made. With the present ideas in vogue of shaving down the numerical strength of the army to as nearly as possible its minimum limit, its training is once more carried on under very considerable difficulties. With the strength of a company fixed at a maximum of sixty five, after making allowances for its being hardly ever continuously

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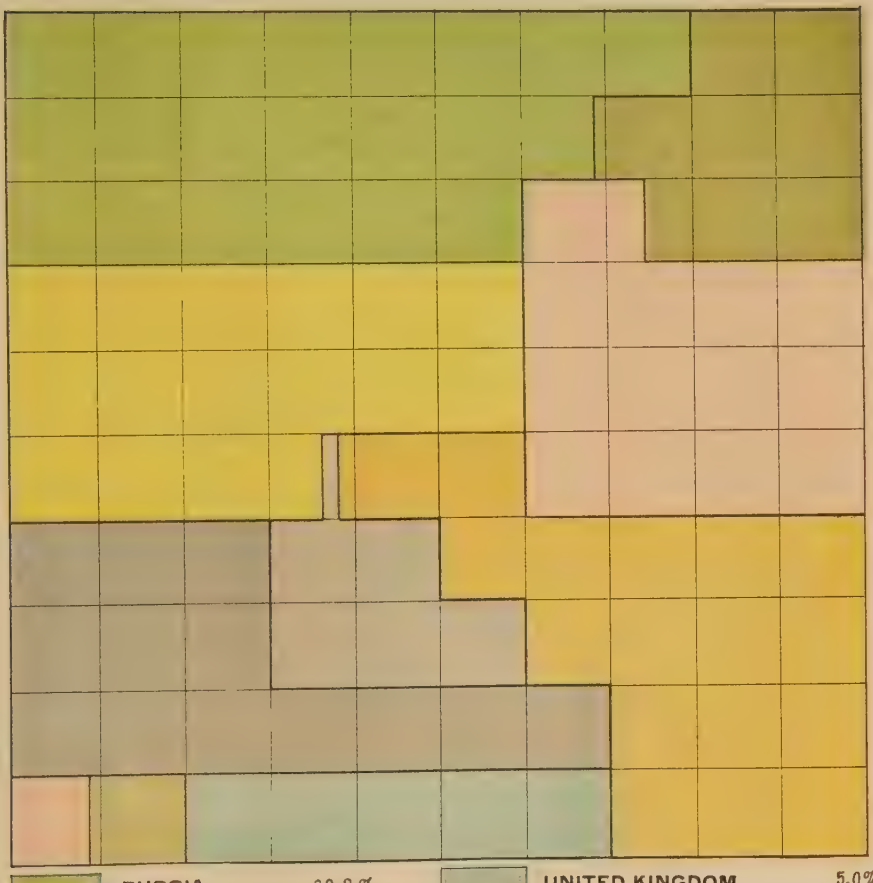

RUSSIA	20.8%	UNITED KINGDOM	5.0%
TURKEY	7.8 "	JAPAN	5.2 "
GERMANY	15.6 "	SPAIN	1.1 "
FRANCE	13.0 "	AUSTRIA	13.4 "
ITALY	17.2 "	UNITED STATES	.9 "

filled, the number of men daily deducted for guard duty, fatigue, extra and special duty, sick in hospital or quarters, kitchen police, room orderlies, etc., cut down its strength to such an extent that the number available for drills is, ordinarily, about three squads. By such conditions the regulations duly provided for its training are, in a measure, nullified through the impracticability of carrying out or even illustrating the intentions of the regulations with such small units. The proposition has frequently been seriously put forward to prohibit re-enlistments, on the theory that enough benefit would be derived by the whole country, by thus increasing the number of men who would have experienced three years' training and then returned to civil life to more than counterbalance the ill effect on the army of losing the services of the experienced old soldier. Rather than commit this error it would be of far more benefit to increase the number of men in training by filling up the ranks and allowing a sufficient number of men to properly handle the tools and the methods that are put into their hands to use.

Under the old regime, before the Spanish war, the services suffered from a shortage of officers with nearly all organizations. After the recent increase and reorganization it was hoped that this impediment would be diminished. But new fields of necessary labor have developed and, as the number of officers increased, their duties more than kept pace, both in number and severity, and the number of officers now on absent duty leaves the organizations in as poor if not worse condition than they were before. Battalions are being commanded by captains who have also to perform the duties of company commanders. It is a rare thing that a company has its full quota of officers. Much oftener it has only one, and it is not an infrequent occurrence when there are none. Officers are therefore frequently being moved about from one company to another, in order that some one may be in command, and so frequent are the changes that officers are seldom able to become acquainted with their commands. If a battalion finds itself alone for a time, some of the companies are apt to be compelled to stagger along without an officer in actual command. All of which makes for rapid deterioration. At pres-

ent, as in the past, efficiency is being sacrificed to economy. There are various ways in which the shortage of officers could be remedied. For instance, the vacancies caused with organizations by the withdrawal of officers detailed for duty on the general staff should be filled as is done in the similar cases of officers detailed to places in the department staff. A portion of these needs will be thus looked after, perhaps, but it is scarcely to be expected that anything like complete relief can be soon provided.

As for the general staff, it appears now to be satisfying the needs of the service as rapidly as circumstances will permit, and must be allowed to prove its future usefulness. There is no doubt it will go far to provide adequate plans for organization and preparation for war conditions, but in order that these should be complete and thorough in every respect requires an education of the people to an appreciation of the real needs of the military branch of the government that only time and constant effort can bring about.

That the old volunteer system will take its place in the background, to provide a final reserve, must be insisted upon, but will meet with such resistance as to long delay its accomplishment. While the national guard has been strengthened, it possesses such inherent and apparently ineradicable weaknesses that its usefulness is seriously impaired. It is not truly national, and no state force can well become immediately effective for the prosecution of a war. We may congratulate ourselves that the material of the army is, in the main, well up to date. With the close touch now in existence between the line and the departments, the interest of each in the other is likely to keep it so and, probably, improve it rapidly, unless a reactionary spirit again secures the upper hand. In this very improvement the detail system has already demonstrated its usefulness and, possibly after some modifications, will continue to do so unless the reactionaries should succeed in upsetting the whole system, or details be allowed to repeat themselves again and again until the real good to the army at large is lost. That the departments will still lose some officers at the outbreak of war is to be expected, but it is to be hoped the evil will not again be so great. At least, if the

detail system is allowed to carry out the original intention of its creation, there will always be a much greater number of experienced officers in the army who will be able to take up the work at once, when called upon to do so, instead of merely doing the best they can until costly experience has been gained.

While every one, civilian and soldier alike, will admit the desirability of keeping the army clear of politics, and political and social influence, it is not to be expected that it will ever be completely so. There is this to be said, that the more nearly we are prepared with our plans, and the less confusion we can have at the outset of war, the less will be the influence of the politician at that critical moment. Finally, the time lost in training, at the next call to arms, will depend upon how well we have organized and laid our plans beforehand. In other words, how much we shall learn of what we have yet failed to learn, and to what extent we shall be able to enforce the application of these lessons.

At the very threshold of inquiry lies the most serious problem of all, for which, as yet, no satisfactory solution has been adopted. That is, how to have ready, at the beginning of hostilities, a sufficiently large force to oppose to that of any power with which we would probably find ourselves at war. It is one of the conditions of our national life that we are now precluded from maintaining, in peace times, an army of anything like sufficient strength to take and keep the field, alone, against that of any other real power. Barring this solution, therefore, it is an imperative duty to find another that will provide us with some adequate force that may be quickly added to the regular army when necessary, and that will prove to be immediately effective. The value of a volunteer force, as an adjunct to the military arm of our country, is indisputable, but we have made the mistake of regarding it, not as an adjunct, but as the first and main reliance. We need not prove that it cannot form the first line, which will have to meet the shock of combat with troops of modern military training, or that it cannot be regarded as the backbone of our army. That has been proved, over and over, by experience. In any international disturbance we must stand ready to meet the shock of battle at a very early period. We

must be prepared to look upon the preparations or the mobilization of troops as the immediate forerunner of action. The war between Japan and Russia is no isolated case. In all wars of recent date, acts of hostilities, often amounting to actual combat, have taken place before a formal declaration was made by either side. Volunteers, as we understand the term, cannot be called upon until war is assured or, in other words, until war has begun, and then the mobilization, organization, and training of such an absolutely raw force is slow and laborious. Before they can be put before the enemy in the field, with the slightest hope of accomplishing anything with them, several months will have elapsed; but several months will not have passed before we shall be forced to meet and engage an energetic and ready foe. What other force, then, can we use?

The national guard has now been placed by law on a semi-national footing, and has been stiffened and better provided for. If it could be really nationalized, careful and diligent handling might create a force of considerable potentiality that should be able to take the field much more quickly than volunteers. Yet it must not be forgotten that it is subject to many decided limitations. It is and always will be a state force. It is essentially a popular organization and must remain so, for it depends upon its popularity for its strength of numbers and apparent success. We may pass over its minor faults, such as the popular election of its officers, as matters permitting of remedy. But there are fundamental weaknesses that do not permit of any remedy. Its members, men with no other military training, are habitually engaged in various civil employments that were first, and must remain first, in their consideration. To weld them into a homogeneous and effective force demands that they be compelled to devote a considerable part of their time to the work of the soldier, and as the guard is further nationalized and improved, this demand will become more imperative. But step by step with this growing demand grow civil conditions that will make it more and more onerous and difficult for the guardsman to comply with. The use of the guard as a police force brings it into conflict with a section of the population that

resents and threatens its very existence. As this section is growing in strength through the powers of trades unions and the immense weight with which they are beginning to be credited in politics, their opposition may well be considered serious.

The experience of recruiting officers, inspectors of the national guard, and particularly of those who have examined and mustered in volunteer troops, shows that guard organizations find it necessary to accept a large number of men who, judged by service standards, are of inferior physical quality, and whom therefore the government must reject at the last moment, when they are called into service. Another large class who can and do serve well enough as guardsmen, find, when called upon for service in war, that they cannot comply with the summons, and no number of laws and regulations will prevent the necessity of excusing them. Owing to these causes, the strength of the guard, when most needed, is greatly and unavoidably diminished.

In view of these objections to the present methods of raising a supplementary force, there is a vital necessity for organizing a true reserve of men who shall have enough training to be immediately available at the outbreak of war. I am not for the first time proposing the formation of a veteran reserve, but the necessity seems to me so great that the idea and the plans for its organization should be kept constantly at the front. There is now a splendid force of trained and disciplined men, consisting of those discharged from the army upon expiration of term of service, literally going to waste for want of the attention and the small amount of legislation and expense necessary to conserve it. Under our system, since all service is absolutely voluntary, it is not possible to form from these men a compulsory reserve unless we are willing to adopt some form of conscription. Nevertheless, it seems reasonable that a large part of the men who have had from three to nine years of service and know what the army really is would voluntarily enroll themselves as members of a reserve whose exactions are but a fraction of those demanded by constant service with the colors, for a cash compensation which, though small, would be an inducement for them to keep the war department informed of their whereabouts and to be pre-

pared for the few duties they would be called upon to perform between the dates of their discharge from and re-entry into active service. It is probable that a very few years would be sufficient in which to thus enroll a reserve of such numerical strength that, making allowances for all necessary deductions, it would be able to take the field with at least the strength at which the regular army had been previously maintained. Of course its members could not remain reservists the rest of their lives but, within reasonable age limits, they would have the advantage over all other reserves of having been once thoroughly trained in a system as complete as any of its kind in the world, the effect of which would never be lost upon them. With proper plans for their mobilization, stores for their equipment in readiness, and capably officered according to a rational system, they would be ready to take the field with very little delay.

Within the limits of this article it is not practicable to go far into the details of plans for the organization and handling of such a force. It will not be amiss, however, to say that its higher officers should come from the officers of the regular army, according to a fixed scheme which will keep them always in readiness and will put the seniors at the head, so that all grades throughout the army will be equally benefited. The lower grades should be filled by duly qualified enlisted men of the army, and by civilians who have received training at a military school or in in some similar manner. In this way the proper ambitions of all officers will be stimulated and the men will find themselves under officers who are fitted for command and in whom, from the first, they can feel complete confidence.

For the regular army itself, some reformation must be made looking toward keeping the various commands more nearly intact, and at such a strength that their training may be a real preparation for war service; otherwise they cannot be brought to that state of readiness expected of them. And when the critical time comes, if we are in any wise lacking, it is we who will bear the blame, no matter who may be really at fault. The wish to cut down the strength of the army to its lowest possible figure in order to produce a favorable political

impression must, if we are to have a truly effective army, be subordinated to the needs of the service. It is only on the stage that the ideally perfect army exists without commanding officers and enlisted men. At present our military workers are in a position somewhat like that of the Israelite brickmakers in Egypt—they are commanded to make brick without straw. Is the artilleryman demanding too much when he asks for men enough to handle his guns, or the cavalryman or infantryman when he asks for enough men to enable him to drill his troop or company correctly in the movements prescribed by the drill regulations? Speaking for the infantry, the captain should have available for drill, at most times, eight squads. As that calls for sixty four men, if the squads are complete, it cannot be done with a company whose maximum limit is sixty five. A company whose limit is the latter number is usually recruited to about fifty seven, actually, and turns out three squads for drill. If the present methods were followed in every respect about one hundred and twenty men would be required to furnish eight squads. If proper provision were made for workmen, a strength of eighty would be amply sufficient. Habitually, the place of the soldier is in the ranks of his company, clothed in his proper uniform, and being taught the management of the weapon that is given him to use; not in the grimy habiliments of a coal heaver or a ditch digger, engaged in labor that is distasteful to him and which he does at the expense of his own and his company's efficiency. Mechanics, plumbers, blacksmiths, carpenters, painters, teamsters, laborers, whether their labor is that of a stevedore, a storekeeper or a clerk in an office, should no longer be taken from the ranks of the fighting men, but should be furnished by an army service corps, enlisted for those very purposes. The demoralizing extra duty and extra duty pay should go, and there should be few men on special duty. A great part of the fatigue work, whether old guard or extra, should likewise be taken over by the enlisted laborer.

In attempting to improve any branch of the army, moreover, we must avoid the error of supposing that one can be improved at the expense of another. For example, every one concedes that the coast artillery must be greatly augmented, but this increase must not be accomplished by diminishing the

mobile army, small as it already is. The proposal to do so has been explained by the statement that the navy and coast artillery should be made so strong as to hold off an attacking enemy long enough to allow an army of militia and volunteers to be organized. Such are the views of a non-military man who wholly overlooks, at the outset, two vital truths that baffle the accomplishment of such a plan.

First,—two of our four lines of frontier are wholly land lines, where battleships and heavy artillery would be of no more value in resisting an invasion than the pawns of a chess board. What is to stand along those thousands of miles while raw levies are being formed and trained? Field artillery, cavalry and the chief arm of defense, infantry.

Second,—no war was ever won on purely defensive lines, To speak of confining our warlike operations to defense is absurd. Forces should be provided for offense as well as defense in order that, if forced to go to war, we may end it as quickly as possible by assuming the offensive. Nothing will ever illustrate this fact better than the Spanish-American war. It was quickly completed to our advantage, but not by the navy and heavy artillery. The latter had no part in it. Had it been left to such a course it would have dragged on at an expense of millions on millions of dollars, and, finally, we would have had intervention by a combination of other powers. Instead, every blow by the navy simply opened a demand for a mobile army to complete their work and to make it decisive. In both hemispheres arose a call for an army of the mobile arms that had to be answered. Volunteer troops could not then fill the requirements, nor can they do so in the future. Troops handling weapons and methods of a more technical character than those in use by the infantry must, indeed, be kept up; but it must not be forgotten that the latter has also to undergo its technical training, and that it must be maintained in a state of readiness and in reasonably large numbers. The two armies we sent forth in 1898 were composed chiefly of that arm, the main strength of offense as well as of defense, since no offensive movement can be driven home and made decisive except by infantry.

Reference has already been made to the deplorable lack of officers and the necessity of providing a greater number on duty with troops. In the first place, the training and the work of the officer should be in affairs military and not civil. The retired officer may, in many cases, be able to satisfactorily replace his brother on the active list, so as to allow the latter to return to really active duty. But if the vast amount of collateral duty requires the services of so many active officers, the number of them must be correspondingly increased. When places are to be filled by the detail of officers for a considerable time, or are filled continuously by the detail of one officer after another, such as positions on the general staff, or at military colleges and schools, provision should be made for filling the places made vacant by their withdrawal from duty with troops by promotion, as is now done in the similar case of details to the department staff. The tale of bricks will be neither complete nor flawless unless there are an adequate number of brickmakers as well as a sufficient supply of straw.

The general staff and the detail system for the departments are too new to warrant serious adverse criticism, and the complaints now made in some quarters must still be considered as lacking sufficient foundation. But the handling of detail privileges in the past should warn us to be on the look out for one pitfall that may, if it be not avoided, wreck the whole well-ordered machine. Despite laws and regulations designed to repress them, there have always been a number of officers who are detail and special duty seekers by nature. Laws, orders and regulations are set aside or evaded for their benefit. Having once secured a detail, it is either renewed at the expiration of its original term or they go from that to some other, in spite of any and all enactments that they shall return, at stated periods, to duty with troops. For these officers the new and numerous places opened to them under the recent detail reorganization will afford choice picking, if firm measures are not adopted to prevent it. It is possible for them to defeat the entire object of the detail system by extending the class of detail officers so that positions will constantly rotate among them-thus cutting off the proper aspirations of others and excluding the great body of the army from obtaining the knowledge that

should be as widely distributed as possible among its officers. The hope of the army may thus be made its curse. The operations of a detail system so deflected from its proper course would be worse than the former system of permanent tenures.

A desire for personal renown and advancement, like the desire for money in civil life, is, with us, one of the mainsprings of military accomplishment. This ambition is the result of centuries of precedent and training of our race. Like the craving for fortune and the power that money gives, it seems to us, within certain bounds, to be commendable. At any rate, rank, power and the plaudits of our fellows are the blinding lights that lure us on, and, right or wrong, he who does not seek them is considered by the world to be lacking in strength. But again like the lust of gold, this ambition unchecked involves wrong, repression and ruin somewhere. It may not be clear, at first sight, how such an ambition can prove a detriment to the army and the country that it nominally serves, but no other illustration is here needed than to point again to the serious crippling of important departments by the voluntary withdrawal from them of officers, at the outbreak of war, to positions that seemed to them to open the way for the gratification of these ambitions.

I have attempted, so far as possible, to avoid introducing illustrations and incidents observable in the conduct of the Russo-Japanese war, for a number of reasons. First, I wish to avoid every word and sentiment that smacks of partisanship. Second, it is human weakness to blindly run after and attempt to copy the apparently successful. But the fact is that it is also our duty to soberly reflect upon the lessons the Japanese have to teach us, and to try if we cannot help ourselves by them rather than to close about us a shell of racial prejudice and imagined superiority. They have astonished the world by winning, from the apparently impossible, a success that can never be denied them. It is well for us to inquire what are the traits and the methods by which this success has been won, and to try how far we can engraft them upon ourselves for our own benefit. It is admitted that one of the strongest points of Japanese character is the desire, when fighting is to be done, to be in the ranks of the fighting men and to lay down

life, if need be, for Japan and the emperor. But it is equally agreeed that no unsightly scramble for place, power and popular applause is taking place. No matter where placed, it is expected of the Japanese that he will do his work with the interest, the zeal and the completeness of every other man. Every part of the army must do its work as well as every other part. Where every man belongs to the gods there is small room for the little hero we one day set up and the next cast down; beside their broader sense of purpose our uncertain and evanescent rewards seem cheap and tinsel. Our training has exalted the individual above the collective—above the community and the state. Theirs has submerged the individual in the state—he exists only for the public good. When need comes again, will we have learned to submerge our now triumphant individualism so far as to allow the common good to rise above personal ambition?

Closely connected with this subject is the problem of keeping the army free from political influence. The point at which our political system has arrived seems the very apex of vaulting individualism. Try as we may, the army cannot be kept very different from the remainder of the people surrounding it, for it comes of the people and the people wish it to be more and more their own. Politics furnishes the means for gratifying the ambition of the individual in as well as out of the army, and no system invented by our race furnishes a solution. The outlook does not seem bright, for when an attempt is made to free one part of the military system from political influence, some other portion will be found to be suffering the horrors of a prostitution worse than ever before, the relief of one part and the oppression of the other, perhaps, bestowed by the same hand.

The question of transportation for the army is deserving of more attention than has yet been bestowed upon it. For convenience of brief discussion the subject may be divided into four classes: marine, wagon, rail and pack transportation. The Spanish war and the Philippines have led to the development of our deep sea transportation from nothing to a very efficient and satisfactory service. To claim perfection for it would be too much, but, considering our total lack of experience

in 1898, the rapidity of its development has been remarkable. We have only to remember our woeful experience with chartered transports in 1898, to urge us to resist the efforts of private interests, operating politically, to have the government transport service discontinued for their benefit. Little need be said of wagon transportation which, for its own use, has stood a long and severe trial.

By pack transportation I mean any means of transporting property in small loads so as to obtain the maximum of mobility. The method most familiar before the Spanish war was by pack mules. Philippine experience has introduced to us the pony cart, the coolie bearer, and the burro. But practice in the use of any and all these means has been sporadic and intermittent. They should not be left for application only at the last moment, depending upon invention to maintain the relation of dutiful son to necessity. All are useful and necessary under various conditions, and their use should therefore, be made more familiar to the army at large.

It is in the matter of transportation by rail, however, that we are most careless. All this business is, necessarily, done by contract with corporation-owned roads, and therefore but little real study has been put upon it by any one, in the army or out. When troops or property are to be moved, the chief concern of the army supervisors of the movement is to get the necessary papers accomplished in an exactly proper manner; of the railway company, to fulfil their contract with the least possible trouble and expense to themselves. That is, of course, only a matter of business. Neither party, therefore, has seen fit to look forward to the coming of inevitable emergencies, or to provide for their handling in such manner as to prevent congestion of traffic, bring troops and stores forward without delay and deliver them without confusion. Rail transportation is our chief means. With the wide expanse of our country and its many lines of railway, it concerns us more than any one, perhaps of all the other methods, and we must give it the attention it demands.

Frequently as troops have been transported by rail in the last six years, it would seem that every one should have gained knowledge and formed plans that would prevent hesitancy

and confusion in, at least, the entraining of them. Yet how often do we see commands performing this initial step of a journey by rail with less preparation and order than are ordinarily manifested in the loading of horses! Arrangements made without reference to the commander of the troops to be transported are therefore more or less unknown to him. If fortunate enough to find their trains and baggage, there is no guarantee against hours of fruitless wrangling over inadequate car space or berthage, the order in which companies are to entrain and the cars to which each is to be assigned. If the amount of baggage will not allow of the use of a baggage car as a commissary and kitchen car, no provision is made for the extra space in the others to accommodate these necessities. Car porters are left to be provided for by the troops at the expense of their own comfort. When, finally, the task of entraining is accomplished, everyone concerned is tired and disgusted. The needs of the troops should be consulted and the control of their commander should begin at an earlier period—long before the command reaches the entraining station. Then everything will be known beforehand—the exact number of cars and the equipment of each—and timely corrections can be applied. Each troop car can be marked with the exact number of men from each company that are to occupy it, and the work of entraining any body of troops should consume but a few minutes.

One more question of detail to be carefully considered is that of obtaining the best quality of enlisted man and of developing the material so gained to the highest degree. At the very beginning of this subject I wish to repeat the appeal so often made for a military prison. The necessity for this seems so patent to all officers serving with troops that it is scarcely necessary to reiterate it here, but the appeal has been made again and again, and has not been answered.

It is inevitable that all sorts of men—good, bad and indifferent, should enter the army and should be disposed of in a manner analogous to dispositions made in civil life. The good men go forward in the army, or leave it the better for their service. The bad follow their evil impulses, to their eventual undoing; and the indifferent must be carefully tended to pre-

vent their becoming of the bad rather than the good. In civil life, throughout the country, criminal affairs are so handled that there are both penal and correctional institutions provided. The lad who steals a pie is not incarcerated with the burglar or the murderer. In the best ordered systems there are industrial schools, reformatories, intermediates and penitentiaries. The system is carefully designed to save the young and those guilty of minor offenses from the contaminating influence of the hardened criminal, and to aid them to live right. Yet, as the army guardhouse now exists, it houses and herds the deserter, the drunkard and the hardened offender of long standing, together with men not at all criminal, but guilty of some lesser dereliction that necessitates their confinement as an example in the interests of justice and discipline. Besides this the prisoners require the services of a large number of soldiers to guard them at work, taking these soldiers away from their proper duty with their companies and imposing upon them a hard and extremely disagreeable task. The work the prisoner performs is called hard labor, but is usually lighter than that of the sentinel who guards him. There is always danger of a prisoner's escape, with the certainty that, if he does, the sentinel will himself be confined in the guardhouse and have to stand trial on a serious charge when, perhaps, no guilt attaches to him. All general prisoners should be removed from post guardhouses immediately after trial and confined in real prisons.

The positions of noncommissioned officers, in our army, are not of sufficient value to be an incentive to enlisted men to work for them and to keep them, once they have been obtained. Now, even the position of sergeant is so lightly valued that men holding it are perfectly willing to lose it through transfer or neglect to re-enlist at the merest whim. To begin with, the increase of pay over that of a private does not compensate for the additional work and responsibility. Second, there is not the proper provision for the further advancement of noncommissioned officers of special merit or long and faithful service. To illustrate the underpayment, one may cite the anomalous case of a post quartermaster sergeant and a civilian clerk employed in the same office. From the very nature of

things the sergeant must be the responsible man, and the clerk must be, more or less, his subordinate; yet the clerk is paid a salary more than double that of the sergeant. In justice to all, let all salaries be commensurate with the value of the men required. It will require an increase in the salaries paid to all grades, but men of worth are able to command more money nowadays than when the present schedule was fixed, while the cost of living, especially in the case of an officer, has vastly increased.

The opportunity for men in the ranks to obtain commissions, as it now operates, benefits a special class of young men, most of whom enter the army with that as an object. They remain in the ranks but a short time and do not aid materially in building up and improving the service. The old, long-service non-commissioned officer whom it should be our duty to encourage and reward is not benefited in the least. The places are not open to him, All he can now aspire to are the few places on the post non-commissioned staff. Something brighter should be held out to him. With the organization of a veteran reserve, such men can be assured of positions as officers in the lower grades of the reserve, should it be called into service. Warrant rank, such as exists in the navy, may be established for the more immediate and certain promotion of those proving themselves qualified and worthy. These warrant officers would serve the further useful purpose that they might be able to relieve some of the active commissioned officers now engaged in collateral work, and so allow them to return to their more legitimate duties. Further, they would be a splendid source, in war time, from which to provide officers of reserves and the extra officers inevitably needed in the supply departments, where their experience would stand them in good stead and render them invaluable servants. With these things to point to we can raise the dignity and the valuation placed upon the position of the non-commissioned officer, and thus elevate, at a bound, the whole purpose of the enlisted force of the army.

But at the very foundation of all hope of improvement is a quality the lack of which will handicap our every effort. In our zealous support of the democratic theory we have come

to feel some scorn of the term esprit de corps. But there is such a quality; it is meritorious and deserves cultivation. Perhaps it would be better to describe it by another name. Let us speak of the development and maintenance of an enthusiastic spirit. It is, so far as concerns us, a form of patriotism. The American believes his country is, or he would make it, the best in the world. To the army man our army is, or should be, the best. To the infantryman his arm should excel all others in the army, his regiment be the best in the service, his company the best in its regiment. He may, perhaps, not always feel that his organization is the best, for that belief may take the form of failure to improve, and so result in dry rot. But he must be on the lookout for opportunities to lend his aid to put it at the front and, thereafter, stand ready to keep it there by meeting and vanquishing all comers. There are a thousand methods for promoting such a spirit that will occur constantly to one who is observant. Scoff as we may at tradition, it produces effects that are attainable in no other way. It is right for us to know and take a pride in the accomplishments of those that have gone before us. The hardships endured, the battles fought and the victories won by our regiments and companies in the past have been endured and fought and won by our forefathers in arms. Let us make them our forefathers in sentiment as well as in fact. We will rapidly do so if the opportunity is given us. Every regiment in the service should have its history written in such a way as to make plain that of each company that composes it. Not as a mere dry, dead tabulation of facts, printed in a pamphlet and laid away as soon as off the press, to molder among official reports; but as a history is written to secure readers and to interest and arouse in them a pride that they are heirs to the fruits of great deeds. Let there be not one copy nor half a dozen, but so many that every officer of the regiment can and must possess one, and every company at least five or six. Let officers and men be encouraged, even compelled, to read and to be well versed in the story that it tells. Let us possess it as our own. It is not a matter of boasting, but one of honor, to know and be proud of the men and the deeds that have been done before our time.

Our volunteer forces have always, in one way, possessed an advantage in the pride of locality—usually of a state. They looked to friends and relatives at home for praise and encouragement, and they did not look in vain. The people at home looked to them to perpetuate and increase the name and fame of their community. Looking again to illustrations from Japanese experience, we see this and something more. There is not only a local pride of the Sendai men, of the Osaka regiments, but we hear of the Twelfth division, of the Tenth regiment, of the Fourth company. In the veteran reserve which I have proposed these sentiments will also be combined, for it will be localized by regiments and also closely attached to the regular army by origin. The regular army man takes a quiet pride in the regular army. Let his pride be nurtured. Help it increase, not only in the army, but in his regiment, his company, and in himself. Away with a makeshift uniform whose characteristic is uniformity, and give him a permanent, attractive one that will help him to feel that a soldier should look the part of a soldier and not that of a slouch and a rake. His warlike work will not be the less well done for his having been able to feel before it begun that he was truly a soldier.

Give him, when he has done this work to which his life is, for the time, dedicated, an emblem to show what he has done. The navy has, for many years, given its officers and men campaign medals which they are proud to receive. After the Spanish war it was proposed to do as well by the army. Why has it not been done? Is it thought the army does not desire these tokens? If so, some one has sadly misconstrued its spirit and its wish. They are, to the soldier, a source of pride and satisfaction, and they will be to his posterity a priceless legacy. It is not in the public school, but in the home, where the sword or the rifle of the father and the grandfather first awaken the glowing fires of patriotism.

The possession by regiments of coats of arms is neither snobbish nor un-American. They are emblems its members should be able to wear with pride, as everywhere distinctive of the regiment and indicative of its history. To the soldier they have the sanction of generations of his fathers who went forth

bearing arms. Help him to look back, now and then, in order that he may better look forward. Emblazon on the colors of his regiment the names of its battles, that all may see and note what manner of men once fought under them, and we may be sure that a like manner of men will fight under them once again, when there comes the call to battle.

THE GENERAL STAFF.

BY ELIHU ROOT.

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The important military event of recent years affecting the regular army has been the reorganization of the system of military control under the general staff act approved February 14, 1903. This act abolished the separate office of the general commissioner of the army, provided for a military chief of staff to the president, who, acting under the directions of the president, or of the secretary of war representing him, should have supervision not only of all troops of the line, but of the special staff and supply departments which had theretofore reported directly to the secretary of war; and it created for the assistance of the chief of staff, a corps of 44 officers, who were relieved from all other duties. The function of this new corps is described by the statute in the following words:

"Sec. 2. That the duties of the general staff corps shall be to prepare plans for the national defense and for the mobilization of the military forces in time of war; to investigate and report upon all questions affecting the efficiency of the army and its state of preparation for military operations; to render professional aid and assistance to the secretary of war and to general officers and other superior commanders, and to act as their agents in informing and coordinating the action of all the different officers who are subject, under the terms of this act, to the supervision of the chief of staff; and to perform such other military duties not otherwise assigned by law as may be from time to time prescribed by the president."

Although, by its terms, the act was not to take effect until August 15th, 1903, it was obvious that this radical change in the administration of military affairs and the adjustment of the new machinery to the old machinery which had been in oper-

ation for many years, would require a vast number of details to be worked out experimentally and upon full consideration by all the officers whose duties were affected. A board was accordingly convened in March to recommend selections for the new corps. It consisted of Generals Young, Chaffee, John C. Bates, Carter, Bliss, and Randolph, and Major Henry A. Greene, as recorded. The board was required under oath to recommend 42 officers for detail upon their merits as exhibited by their military records. The order which convened the board also provided that vacancies occurring in the general staff corps, after its organization, should be filled upon the recommendation of a permanent board consisting of the chief of staff and the three senior officers of the general staff corps on duty at the war department, operating in a similar manner.

The three general officers of the staff were selected by the president without action of a board.

Upon the report of this board its recommendations were approved without change, and the officers selected were ordered to Washington to report to General Young, who was to be the first chief of staff. They were then organized as an experimental or provisional general staff, and directed to work out a permanent organization and distribution of duties for the general staff corps, a draft of new regulations, and a revision of the old regulations made necessary by the new departure. This work was done upon full consultation with the chiefs of bureaus and taking the opinions of general officers commanding departments, and was accompanied by reference to the provisional staff organization of many tasks and problems to be worked out which were appropriate for general staff action, in order that they might become familiar with their work, and test by experiment the best methods of accomplishing it. In this way when the act took effect the general staff was ready to enter upon the discharge of its duties with a fully considered organization, distribution of duties and regulations, and a considerable familiarity with the new duties which its members were to perform.

The regulations which govern the operation of the new corps divide the corps into the war department general staff and the general staff serving with troops (that is to say, in time

of peace with the generals commanding geographical departments) and they prescribe the duties and relations of each of the two classes.

The tenth article of the regulations relating to the chief of staff states explicitly the new theory of control inaugurated by the general staff act. It will be remembered that our old plan of army administration was that there should be a general commanding the army in peace as well as in war, responsible for the efficiency, discipline, and conduct of the troops, but having no control over finances or the departments of supply and transportation; and that there should be a secretary of war controlling the finances and the money spending bureaus, but not commanding the army, or responsible for the conduct of purely military affairs; and it will be remembered that the result of attempting to work upon that theory of dual and separate responsibility was almost constant discord and a consequent reduction of efficiency. The new theory is stated by the regulations, as follows:

"Under the act of February 14, 1903, the command of the army of the United States rests with the constitutional commander in chief, the president. The president will place parts of the army, and separate armies whenever constituted, under commanders subordinate to his general command; and in case of exigency seeming to him to require it, he may place the whole army under a single commander subordinate to him; but in time of peace and under ordinary conditions, the administration and control of the army are effected without any second in command.

"The president's command is exercised through the secretary of war and the chief of staff. The secretary of war is charged with carrying out the policies of the president in military affairs. He directly represents the president and is bound always to act in conformity to the president's instructions. Under the law and the decisions of the Supreme court his acts are the president's acts, and his directions and orders are the president's directions and orders.

"The chief of staff reports to the secretary of war, acts as a military adviser, receives from him the directions and orders

given in behalf of the president, and gives effect thereto in the manner hereinafter provided.

"Exceptions to this ordinary course of administration may, however, be made at any time by special direction of the president if he sees fit to call upon the chief of staff to give information or advice or receive instructions, directly.

"Wherever in these regulations action by the president is referred to, the action of the president through the secretary of war is included, and wherever the action of the secretary of war is referred to, the secretary of war is deemed to act as the representative of the president and under his directions."

The chief of staff is detailed by the president from officers of the army at large not below the grade of brigadier general. The successful performance of the duties of the position require what the title denotes—a relation of absolute confidence and personal accord and sympathy between the chief of staff and the president, and necessarily, also between the chief of staff and the secretary of war. For this reason, without any reflection whatever upon the officer detailed, the detail will in every case, unless sooner terminated, end on the day following the expiration of the term of office of the president by whom the detail is made; and if at any time the chief of staff considers that he can no longer sustain toward the president and the secretary of war the relations above described, it will be his duty to apply to be relieved.

It will be perceived that we are here providing for civilian control over the military arm, but for civilian control to be exercised through a single military expert of high rank, who is provided with an adequate corps of professional assistants to aid him in the performance of his duties, and who is bound to use all his professional skill and knowledge in giving effect to the purposes and general directions of his civilian superior, or make way for another expert who will do so.

In this way it is hoped that the problem of reconciling civilian control with military efficiency with which we have been struggling for so many years will be solved.

The general scheme of organization of the war department general staff contemplates that every subject requiring investigation and study shall be worked out first by the officers

assigned to the appropriate division and section of the staff, and when of sufficient importance, shall then be considered by a general staff council composed of the three general officers of the corps and the heads of the three divisions, and shall then be acted upon by the chief of staff or laid before the secretary of war by him, with his recommendation. It is gratifying to report that the new system of control has been accompanied by most harmonious effort and cheerful good will on the part of the members of the general staff, the chiefs of all the war department bureaus, and the officers of the army at large. In some cases the intervention of the chief of staff and his assistants has resulted in an apparent diminution of the independent authority of other officers. This has been received almost universally with a cheerful readiness to subordinate personal consideration to the good of the service. The exceptions have been so few and unimportant as to justify the belief that they will soon disappear.

Much of the work upon which the general staff has been employed is of a confidential nature. To it belong questions which require investigation and the collection of data, or they involve several supply and construction departments, and therefore could not properly be determined by any one such department, or they call for expert opinion upon military policy or needs. Of especial importance may be noted the general subject of the distribution of troops and the location, construction, and enlargement of army posts; the plan for the attendance of militia officers upon military schools and colleges of the regular army; the detail of student officers to the general service and staff college; the location of military posts in Porto Rico; the reorganization of field batteries; the prevention of desertions; the organization of maneuver divisions and plans for mobilization at West Point, Key West and Fort Riley; the purchase of lands for posts and coast fortifications; the revision of army regulations; the revision of infantry drill regulations; the location of a brigade post on the Niagara River; the examination and revision of army appropriation estimates; the details of officers for duty at military academies and colleges; regulations for muster of militia into the service of the United States; reclassification and carding of the professional data on

file in the military information division; organization of Alaskan militia; the rearrangement of territorial departments; the composition, duties and limits of the principal permanent boards in the army; the study of the storage and supply depots of all kinds with reference to the prompt and effective collection and distribution of supplies in case of war; the revision of the articles of war for submission to congress, adapting them to meet modern conditions and requirements; the study in detail of the supplies necessary for active military operations, including the stock on hand, the productive capacity of government manufacturers and of private manufacturers, the sources of raw material, and the length of time necessary for production in requisite quantities; and an inquiry into all the elements of cost for seacoast defenses up to this time, and the prospective cost of continuance and maintenance.

Special credit is due to Brigadier General William H. Carter for the exceptional ability and untiring industry which he has contributed to the work of devising, bringing about, and putting into operation the general staff law. He brought thorough and patient historical research and wide experience, both in the line and the staff, to the aid of long continued, anxious, and concentrated thought upon the problem of improving military administration; and if the new system shall prove to be an improvement, the gain to the country will have been largely due to him.

Following the same line of policy which led to the organization of the general staff, the secretaries of war and the navy entered into an arrangement, with the approval of the president, as follows:

"The department of war and the department of the navy have agreed upon the formation of a joint board to be composed of four officers of the army and four officers of the navy, to hold stated sessions and such extraordinary sessions as shall appear advisable for the purpose of conferring upon, discussing, and reaching common conclusions regarding all matters calling for the coöperation of the two services. Any matters which seem to either department to call for such consideration may be referred by that department to the board thus formed. All reports of the board shall be made in duplicate, one to each de-

partment. All reports and proceedings of the board shall be confidential."

The common understanding and mutual assistance between the two services, which it is within the power of this board to bring about, may be made to cover a wide range of subjects of great public importance, including the parts to be taken by the military and naval forces, respectively, in case of military operations on the seaboards and on navigable lakes and rivers; artillery defense of naval stations and naval defensive aid to seacoast fortifications; the exchange of information obtained by one branch of the service and useful for both; the manufacture or purchase of cannon, projectiles, explosives, small arms, ammunition, and munitions of war generally available for both services; the purchase and transportation of supplies; the transportation of men upon changes of station; the study and discussion of joint military and naval problems. In all these, and in many other respects, much greater efficiency at much less cost, can be obtained by coöperation and mutual understanding than by separate services working in entire independence of each other. If the two forces are ever to be called upon to coöperate, the time to determine what each shall do, and the time for each to learn what the other can do, is before the exigency arises. It is hoped that this joint board, which is so constituted as to command the assistance of the general staff in both arms of the service for the working out of its problems, will contribute materially toward the end desired.

MILITARY POLICY OF THE UNITED STATES.

BY EMORY UPTON.

[Emory Upton, soldier, born in New York and appointed to the military academy from that state; graduated in 1860, and became while almost a boy one of the most distinguished officers of the Civil war, commanding successively a battery of artillery, a regiment of infantry, a brigade of artillery, and a division of cavalry. Professor Michie says: "He had a real genius for war, together with all the theoretical and practical knowledge any one could acquire in regard to it." He was brevet major-general in the regular army at the time of his death.]

Shortly after the disastrous battle of Camden, Washington wrote to the president of congress, "What we need is a good army, not a large one". Unfortunately for the country, the object sought by this assertion, so thoroughly in harmony with our cherished institutions, has only been partially attained in time of peace.

In view of the growth of our neighbors, the vast extent of our territory, and the rapid increase of our floating population, the time must speedily arrive when all intelligent and law abiding people will accept, and adhere to, the opinion of John Adams that the national defense is one of the cardinal duties of a statesman.

Our military policy, or, as many would affirm, our want of it, has now been tested during more than a century. It has been tried in foreign, domestic, and Indian wars, and while military men, from painful experience, are united as to its defects and dangers, our final success in each conflict has so blinded the popular mind, as to induce the belief that as a nation we are invincible.

With the greater mass of people, who have neither the time nor the inclination to study the requirements of military science, no error is more common than to mistake military resources for military strength, and particularly is this the case with ourselves.

History records our triumphs in the Revolution, in the war of 1812, in the Florida war, in the Mexican war, and in the great rebellion, and as nearly all of these wars were largely begun by militia and volunteers, the conviction has been produced that with us a regular army is not a necessity.

In relating the events of these wars, the historian has generally limited himself to describing the battles that have been fought, without seeking to investigate the delays and disasters by which they have been prolonged till, in nearly every instance, the national resources have been exhausted.

The object of this article is to treat historically and statistically our military policy up to the present time, and to show the enormous and unnecessary sacrifice of life and treasure which has attended all our armed struggles.

Whether we may be willing to admit it or not, in the conduct of war, we have rejected the practice of European nations, and with little variation have thus far pursued the policy of China.

All of our wars have been prolonged for want of judicious and economical preparation; and often when the people have impatiently awaited the tidings of victory, those of humiliating defeat have plunged the nation into mourning.

The cause of all this is obvious to the soldier, and should be no less obvious to the statesman. It lies partly in the unfounded jealousy of not a large, but even a small, standing army; in the persistent use of raw troops; in the want of an expansive organization, adequate for every prospective emergency; in short and voluntary enlistments, carrying with them large bounties; and in a variety of other defects which need not here be stated. In treating this subject, I am aware that I tread on delicate ground, and that every volunteer and militiaman who has patriotically responded to the call of his country, in the hour of danger, may possibly regard himself as unjustly attacked.

To such I can only reply, that where they have enlisted for the period of three months, and, as at Bladensburg and on many other fields, have been hurled against veteran troops, they should not hold me responsible for the facts of history. To such volunteers as enlisted for the period of the Mexican war, and particularly for two and three years during the war of the rebellion, with whom it is my pride to have served and to whom I owe all of my advancement in the service, I but express the opinion of all military men, in testifying that their excellence was due, not to the fact that they were vol-

unteers, but to the more important fact that their long term of service enabled them to become, in the highest sense, regulars in drill, discipline, and courage.

With a keen appreciation of their own ignorance and helplessness when they entered the service, the veterans of Gettysburg laughed at the militia who assisted in driving Lee across the Potomac, satirically asking the full regiments fresh from home where they buried their dead? The same men who felt hostile to the regular troops because of their superior discipline, found as they approached the same standard, that no gulf lay between them, and with the recollections of Bull Run fresh in their memories, they in turn ever after made sport of the raw troops which came temporarily to their aid.

Every battlefield of the war after 1861 gave proof to the world of the valor of the disciplined American soldier; but in achieving this reputation the nation was nearly overwhelmed with debt from which we are still suffering, while nearly every family in the land was plunged in mourning.

Already we are forgetting these costly sacrifices, and unless we now frame and bequeath to the succeeding generation a military system suggested by our past experience and commended by the example of other enlightened nations, our rulers and legislators in the next war will fall into the same errors and involve the country in the same sacrifices as in the past.

Up to this time in our history our military policy has been largely shaped by the Anglo-Saxon prejudice against standing armies as a dangerous menace to liberty. Assuming that with this as one of his premises the reader has come to the erroneous conclusion that the officers of the army are wholly given over to selfishness and ambition, it ought not to be difficult to convince him that no one of their number can suggest any change or modification of our system without being false to his guild.

No one can study the subject without acknowledging that our military policy is weak, and that it invites and inevitably produces long wars, and that in the race for military laurels the professional soldier usually distances all competitors.

A century is a short period in the life of a nation, but its history may convey many valuable lessons as the result of the

system which we cherish as our own invention; thus, the war of the revolution lasted seven years, the war of 1812 three years, the Florida war seven years, the Mexican war two years, and the rebellion four years, not to mention the almost incessant Indian wars of this period. In other words, since the publication of the Declaration of Independence to this time these figures show that for every three years of peace we have had one year of actual war.

The same prejudice has led our people to another false conclusion. If standing armies are dangerous to liberty, then it ought to follow that officers of the army should be inimical to republican institutions. But here again, if the lessons of history be read and accepted, it will be admitted that of all forms of government the republican, or democratic, is most favorable to the soldier. There is not a well read officer in our service who does not know that monarchy sets a limit to military ambition, while in republics military fame is frequently rewarded with the highest civic honors.

The history of Rome, Greece and Carthage affords abundant support for this statement, while on the other hand, that of England shows that of all her great heroes, Cromwell alone, in the days of the Commonwealth, stepped from the head of the army to the head of the state. After the restoration, Marlborough and Wellington received titles and estates, but those were bestowed by the crown instead of the people.

In France, Turenne and Conde added the luster of their achievements to the glory of the king, but the wars of the Revolution filled Europe with the fame of republican generals, Napoleon at their head. When through popular favor he became first consul and finally rose to supreme power, he gave rank and titles to his generals, but the fame of his marshals was merged in the glory of the emperor. He knew how to exalt and how to abase; he could tolerate no rival; a line in the Moniteur could at any time make or destroy the reputation of a marshal.

In our day Bismarck planned the political unity of Germany, while Von Moltke alone made it possible by destroying in two campaigns the military power of Austria and France.

Had Germany been a republic, both would have risen to

the chief magistracy of the state, but under a monarchy they had to content themselves with fame, titles, and estates, and the patronizing favor of a kind hearted emperor.

The French, on the contrary, after establishing a republic, elevated to the presidency the marshal who surrendered the imperial army at Sedan.

Our own people, no less than the Romans, are fond of rewarding our military heroes. The revolution made Washington president for two terms; the war of 1812 elevated Jackson and Harrison to the same office, the first for two terms, the latter for one; the Mexican war raised Taylor and Pierce to the presidency, each for one term; the rebellion made Grant president for two terms, Hayes for one term, while Garfield owed his high office as much to his fame as a soldier as to his reputation as a statesman.

Long wars do not reward the highest commanders only. After the revolution, Knox, Dearborn, and Armstrong rose to the office of secretary of war; Hamilton was secretary of the treasury; while Monroe, first secretary of state, was finally elected president for two terms. During the rebellion nearly 150 regular officers rose to the grade of brigadier and major general, who, but for the four years' struggle, would have been unknown outside of the military profession.

Since the war, distinguished officers of volunteers have filled nearly every office in the gift of the people. They have been elected chief magistrates of their states, and on both floors of congress they have been conspicuous alike for their numbers and influence.

The rewards following long wars apply chiefly to the combatant branch of the army; but if we assume that all officers are devoid of patriotism, there is another large class, namely, the staff, who should denounce any change in our system.

The officers of the supply department know that money is power and that the disbursement of it commands influence and friends. During the four years before the rebellion the total disbursements of the quartermaster's department was less than thirty five millions of dollars. During the four years of war they exceeded a thousand millions. Up to 1861 the quartermaster general could give no orders to persons out-

side of his own offices; during the war he issued general orders to more than a hundred thousand employees, and became admiral of a fleet of more than a thousand vessels.

The surgeon general, before 1861, could not control a single sick or convalescent soldier. During the war he was put in command of all the general hospitals, and had subject to his orders more than a hundred thousand men. In other departments, there was a similar increase of authority not enjoyed alone by their respective officers, who, except for the war, would never have been known as agents of the government.

Free from danger and from lust of power, if the noncombatant officers love war more than peace, it is manifest that they, too, should join the ambitious soldier and the demagogue in the cry, Standing armies are dangerous to liberty. But who are our officers that they should be charged with mere selfishness and ambition? If we take those educated by the government from their youth, are they not selected by the representatives of the people and from every class of society?

Are not their fathers, mothers, and their own sons in civil life, and in common with them, are they not citizens of the same country, enjoying the blessings of the same government? Nurtured by this government, taught to love and defend its flag, are they alone of a large family connection most likely to prove false to the institutions which have placed us first among nations? Is death on the field of battle no evidence of love for one's country? Have the officers of our army to-day no sense of duty? In time of universal peace are those who continually expose their lives in Indian wars to open up to civilization the rich lands of the far west actuated by no other motive than love of promotion? These questions to the reader are all pertinent in enabling him to penetrate the motive of the author. Whether or not he will concede to the army a patriotism as bright and enduring as that which prevails in civil life, he no doubt will admit that as the man who uses a weapon is the best judge of its fitness, so a professional soldier should be the best judge of what constitutes a good military system.

In every civilized country success in war depends upon

the organization and application of its military resources. The resources themselves consist of men, material, and money. Their organization is wholly within the province of the statesman.

Under our constitution congress has the power to raise and support armies; and, subject to the supervision of the president only professional soldiers should command them.

In time of war the civilian as much as the soldier is responsible for defeat and disaster. Battles are not lost alone on the field; they may be lost beneath the dome of the capitol, they may be lost in the cabinet, or they may be lost in the private office of the secretary of war. Wherever they may be lost, it is the people who suffer and the soldiers who die, with the knowledge and the conviction that our military policy is a crime against property and a crime against liberty. The author has availed himself of his privileges as a citizen to expose to our people a system, which, if not abandoned, may sooner or later prove fatal. The time when some one should do this has arrived.

Up to the Mexican war there was little that was glorious in our military history.

In the revolution, the continentals or regulars often displayed a valor deserving of victory, but which was snatched away by the misconduct of undisciplined troops.

In the war of 1812 the discipline and victories of the navy alone saved the country from dishonor. On the land the historian of the army was glad to slur over needless disasters, to dwell on the heroism in the open field displayed by the regulars at Chippewa and Lundy's Lane. The Mexican war was a succession of victories. The volunteers as well as the regulars were disciplined troops.

The rebellion began with the defeat at Bull Run, but a multitude of subsequent battles again proved that the valor of the disciplined American troops, be they regulars or volunteers, can not be excelled by the best armies of Europe.

No longer compelled to doubt the prowess of our armies, the time has come to ask what was the cause of defeats like those of Long Island, Camden, Queenstown, Bladensburg, and Bull Run. The people who, under the war powers of the con-

stitution, surrender their liberties and give up their lives and their property have a right to know why our wars are unnecessarily prolonged. They have a right to know whether disasters have been brought about through the neglect and ignorance of congress, which is intrusted with the power to raise and support armies, or through military incompetency. Leaving their representatives free to pay their own salaries, the people have a right to know whether they have devoted their time to studying the art of government. John Adams wrote the maxim that the national defense is the cardinal duty of a statesman.

War, it need scarcely be said, affects the life, liberty, and property of the individual citizen, and beyond that the life of the nation. On its issue necessarily depends the fate of governments and the happiness of millions of human beings, present and future.

From the known method of selecting generals in most of our wars, no one assumes that the title implies knowledge of the art of war. Conscious that our legislators make a merit of neglecting the national defense, shall they, too, like our generals, enjoy unearned titles, or the highest of all titles, that of statesmen?

Foreign governments, surrounded by powerful neighbors, act on the theory that military commanders can be educated, no less than captains and lieutenants. The same theory is true of statesmen. A general does not so much regard the causes of war; his duty is to be familiar with military history and to know the details and principles upon which successful war is conducted.

The statesman, on the contrary, should study peace and the causes which tend to preserve or destroy it. History will teach him that peace ends in war and war again ends in peace. If the causes which terminate peace and produce war can not be removed, and if the legislator does not recognize and know how to create a powerful army, he ceases to be a statesman.

In the course of his labors the author has met with many discouragements. As a rule it has only been necessary to mention to his brother officers the words military policy; to provoke the reply that we have no military policy; that every-

thing is left to luck or chance. While apparently true, this conclusion is nevertheless a mistake.

Laws whose operation have been the same in all of our wars constitute a system, wise or unwise, safe or unsafe, according to their fruit. Contemplating the same results in the rebellion as in the revolution, and the war of 1812, it cannot be denied that the impression has sunk deep into the army, that no change will ever be made for the better. There is ample reason for such a conviction. Ultimate success in all our wars has steeped the people in the delusion that our policy is correct and that any departure from it would be no less difficult than dangerous.

But bad as is our system it would be unpatriotic to attack it if at the same time no remedy could be suggested. In order that this work may not be misjudged we will first indicate to the reader the chief causes of weakness of our present system, and next will outline the system which ought to replace it.

The causes of the weakness are as follows:

First. The employment of militia and undisciplined troops commanded by generals and officers utterly ignorant of the military art.

Second. Short enlistments from three months to three years, instead of for or during the war.

Third. Reliance upon voluntary enlistments, instead of voluntary enlistments coupled with conscription.

Fourth. The intrusion of the states in military affairs and the consequent waging of all our wars on the theory that we are a confederacy instead of a nation.

Fifth. Confusing volunteers with militia and surrendering to the states the right to commission officers of volunteers the same as officers of militia.

Sixth. The bounty—a national consequence of voluntary enlistments.

Seventh. The failure to appreciate military education, and to distribute trained officers as battalion, regimental, and higher commanders in our volunteer armies.

Eighth. The want of territorial recruitment and regimental depots.

Ninth. The want of post graduate schools to educate

our officers in strategy and the higher principles of the art of war.

Tenth. The assumption of command by the secretary of war.

The main features of the proposed system are as follows:

First. In time of peace and war the military forces of the country to consist of:

The regular army.

The national volunteers, and

The militia.

The regular army in time of peace to be organized on the expansive principle, and in proportion to the population, not to exceed one thousand in one million.

The national volunteers to be officered and supported by the government, to be organized on the expansive principle, and to consist in time of peace of one battalion of two hundred men to each congressional district.

The militia to be supported exclusively by the states, and as a last resort to be used only as intended by the constitution, namely, to execute the laws, suppress insurrections, and repel invasions.

The author is well aware that in suggesting this system he will be accused of favoring centralization and strong government. This is a charge which he would neither covet nor deny. No soldier in battle ever witnessed the flight of an undisciplined army without wishing for a strong government, but a government no stronger than was designed by the fathers of the republic.

Founded in the affections of the people, the constitution in time of danger gives congress absolute power to raise and support armies and to lay its hands upon every man and every dollar within the territory of the nation.

Recognizing, moreover, that the individual life is to be sacrificed to the life of a state, the same constitution permits the suspension of the writ of habeas corpus, giving to congress and to the president power not only over life and property, but over the liberty of every citizen of the republic. It is a popular delusion that armies make wars; the fact is wars inevitably make armies. No matter what the form of govern-

ment, war, at the discretion of the rulers, means absolute despotism, the danger from which increases as the war is prolonged. Armies in time of peace have seldom, if ever, overthrown their government, but in time of anarchy and war the people have often sought to dictate, and purchase peace at the expense of their liberty. If we would escape the danger, we should make war with a strong arm. No foreign invader should ever be allowed a foothold on our soil. Recognizing too, that under popular institutions the majority of the people create the government and that the majority will never revolt, it should be our policy to suppress every riot and stamp out every insurrection before it swells to rebellion. This means a strong government, but shall we find greater safety in one that is weaker?

Military resources are one thing and military strength another. For military resistance, the strength of a government is the power it can wield on the field of battle. In the war of 1812 the strength of the government at the battle of Bladensburg was measured by 6,000 militia; at Bull Run it was measured by 35,000 of the same kind of troops. In one case the capital fell into the hands of the enemy, while in the other our existence as a nation possibly depended upon the irresolution and supineness of a band of insurgents. At Gettysburg the wave of rebellion was resisted by 80,000 veteran troops; had we trusted to the same number of militia the capital would have been captured and the government hopelessly destroyed. Unable to suppress in two years an insurrection which culminated in a great rebellion, the representatives of the people were forced to adopt conscription and to concentrate in the hands of the president all the war powers granted by the constitution, whereupon weakness gave place to strength, but at the expense of a needless sacrifice of life and property.

If in time of rebellion our own government grew more despotic as it grew stronger, it is not to be inferred that there is any necessary connection between despotism and military strength.

Twenty thousand regular troops at Bull Run would have routed the insurgents, settled the question of military resist-

ance, and relieved us from the pain and suspense of four years of war.

China, the most despotic of governments, has no military strength; numbering 400,000,000 people, she has been twice conquered by a few despised Tartars.

In Persia the Shah can lop off the heads of his subjects or wall them up alive at his pleasure, and yet it has been said that a single foreign battalion could overthrow his throne, while a brigade would starve in his dominions.

In seeking to avoid the dangers of weakness and despotism the author would not have it imagined that his work will produce immediate effect, or that his system will be adopted in five, ten, or even twenty years. Such a revolution in our military policy must be preceded by a change in popular sentiment

Foreign governments for more than a hundred years have recognized us as a nation, but, strange to say, a fact patent to all the world is as yet recognized by scarcely a majority of our people.

Our forefathers hated Great Britain because she repeatedly subverted the government of the colonies. A large portion of their descendants, confusing states rights with state sovereignty, look upon the general government as equally hostile to the states. When this feeling is abandoned; when it is understood that the life of the state is bound up in the life of the nation; when it is appreciated that republicanism, state and national, guaranteed by the constitution, is the natural bulwark against the two forms of despotism—absolute monarchy on the one side and absolute democracy on the other—then, and not till then will the view of the author be accepted.

EVOLUTION OF THE NATIONAL GUARD.

BY D. H. BOUGHTON.

[Daniel Hall Boughton, major United States army, instructor in law in the United States Infantry and Cavalry School and Staff college; born in Minnesota, Aug. 27, 1858; appointed a cadet in the United States Military academy, Sept. 1873; second lieutenant, 1st cavalry, 1877; first lieutenant, 1884; captain, 1895; major 1st cavalry, 1903; transferred to 11th cavalry, 1904; he is one of the best known authorities in America on military law.]

It does not require a close study of the military policies of the American people to discern that they are by tradition and custom opposed to a large standing army, and that in times of war or other emergency, when the civil government can no longer enforce the laws, they place their main reliance upon what may be broadly termed the citizen soldiery of the republic. Centuries of oppression suffered by their European ancestors, traceable to irresponsible power backed by the force of arms, has taught them to safeguard their liberties by limiting the size of the nation's standing army, and reserving to themselves in their sovereign capacity the right to keep and bear arms.

In the Declaration of Independence we find one of the principal complaints of the colonists against Great Britain was that the latter kept up standing armies in time of peace to overawe the people. And when that declaration had been made a living reality by an appeal to arms extending through eight long years of suffering and death, and a strong, centralized, constitutional government had sprung from the weakness and inadequacy of the union under the articles of confederation, we find the fears of the people crystallized in the second amendment to the constitution of the new nation:

A well regulated militia being necessary to the security of a free state, the right of the people to keep and bear arms shall not be infringed.

This was a constitutional expression of a right which the people then enjoyed, and which they not only reserved to themselves but made its abuse on the part of the new government impossible by this constitutional prohibition. So long, then,

as our government is a government of, for, and by, the people, so long must its ultimate reliance repose upon the intelligence, integrity, and patriotism of its citizen soldiery; and when that support shall fail, be it through commercial venality springing from selfishness and greed, or through the waning of national patriotism, then we may look to see the union pass away.

John Quincy Adams, in his message to congress, March 4, 1825, referred to the militia in these terms:

"The organization of the militia is yet more indispensable to the liberties of the country. It is only by an effective militia that we can, at once, enjoy the repose of peace, and bid defiance to foreign aggression; it is by the militia that we are constituted an armed nation, standing in perpetual panoply of defense, in the presence of all the other nations of the earth."

Four years later, Andrew Jackson, in his inaugural message, spoke as follows:

"The bulwark of our defense is the national militia, which in the present state of our intelligence and population, must render us invincible. . . . So long as it (the constitution) is worth defending, a patriotic militia will cover it with an impenetrable aegis. Partial injuries and occasional mortifications, we may be subjected to, but a million of armed freemen, possessed of the means of war, can never be conquered by a foreign foe."

It is true that the people conferred upon the federal government the power to raise and support armies distinct from those that might be formed by calling forth the militia, but they hedged it about with limitations, and their representatives have always jealously opposed any attempt to augment the standing army beyond the minimum number that to them appeared imperatively necessary. After the revolution the regular or standing army was reduced to eighty men. At the outbreak of the rebellion it numbered about 18,000. After the rebellion and until the beginning of the Spanish-American war it was kept at about 25,000. When a nation situated as is ours, beyond the danger of immediate attack, adopts a military policy to maintain but a small regular establishment, and to depend upon its citizen soldiery, either as militia or

volunteers, such policy is not open to criticism. But when a nation with such a policy fails to adequately provide for organizing, arming, and disciplining its citizen soldiery in a manner making it available in times of national crises, such a policy becomes a national menace and invites the destruction of the very liberties it is supposed to maintain.

The constitution confers upon congress the following power in regard to the militia:

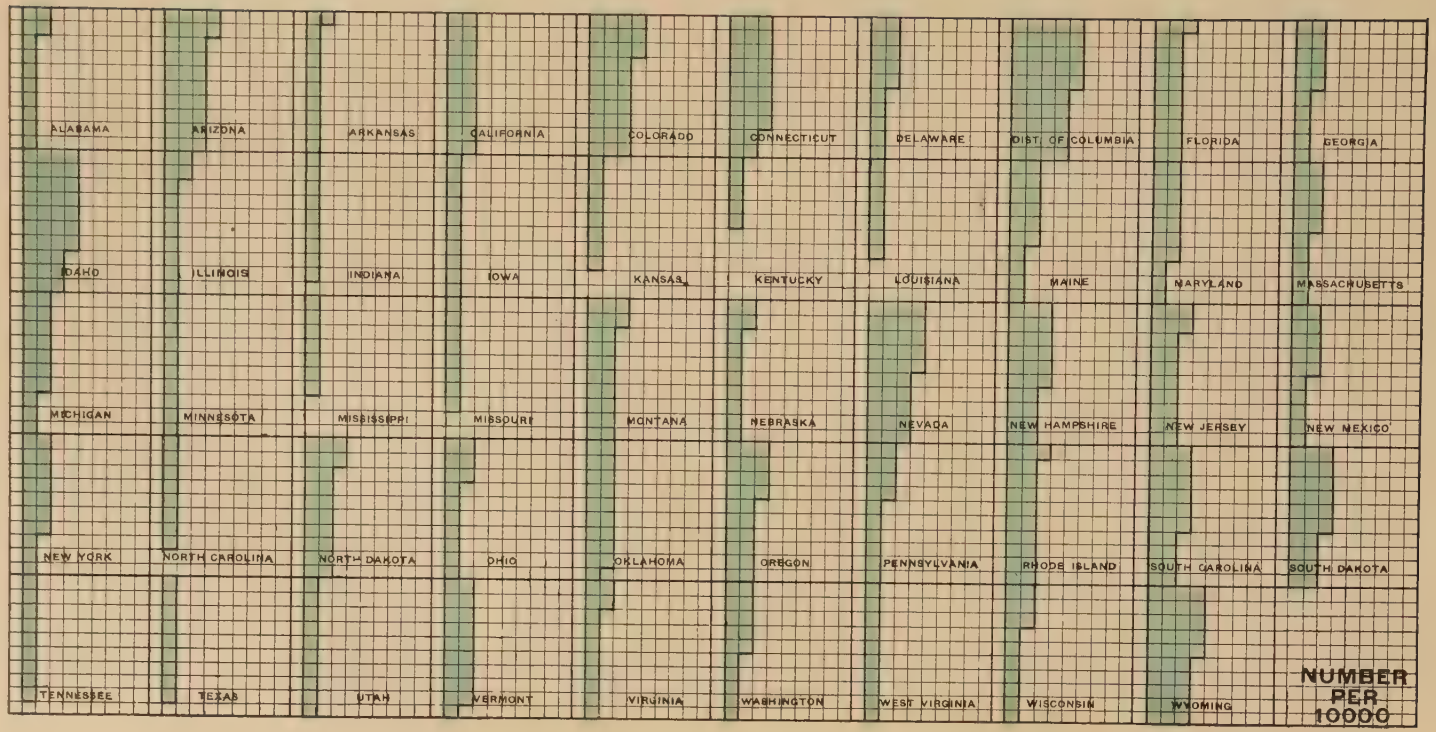
"To provide for calling forth the militia to execute the laws of the union, suppress insurrections, and repel invasions."

This provision states all the purposes for which the militia may be called into the service of the federal government, and makes it impossible for the latter to use this force as a means of conquest or domination of a foreign country. Indeed, according to the weight of authority, the president cannot constitutionally order the militia to invade foreign territory. However, as the best means of repelling an invasion may be by carrying war into the enemy's country, it is conceivable that a liberal construction of the above provision might permit the militia to be so used. Had the constitution stopped here it is not difficult to see that the nation in placing its reliance upon the citizen soldiery would have been leaning upon a slender reed. One hundred years of experience has amply shown that had the organization, arming, and disciplining the militia been left to the several states, some of them in all probability would now be without any organized militia at all, and others would have but indifferent forces, differently armed, organized, and equipped, and with varied systems of drill regulations. It is unnecessary to comment upon the result of calling such heterogeneous forces together in defense of the union. Nor, fortunately, was this danger unforeseen at the beginning. Those great men whose united labors gave us the constitution (the greatest document probably that has ever emanated from the brain of man) fully comprehended the necessities of the situation and provided for them by incorporating in the constitution the further provision giving congress power:

"To provide for organizing, arming and disciplining the militia, and for governing such part of them as may be employed in the service of the United States, reserving to the

MILITIA IN THE UNITED STATES

PER 10,000 INHABITANTS



states respectively the appointment of the officers, and the authority of training the militia according to the discipline prescribed by congress."

The provisions cited cover all the power of congress over the militia, and when fully and intelligently exercised, are ample to accomplish the purposes sought. Indeed, few people have ever realized the magnitude of the military power of the federal government, and have supposed that it was practically limited to raising and supporting the standing or regular army. But consider for a moment its power in regard to the militia. It can provide for organizing, arming, and disciplining this force equally in times of peace or war. This means that every able bodied male citizen of this broad land may be enrolled in the militia, and that this force may then be organized, as congress in its wisdom may deem advisable, into infantry, cavalry, artillery, or other branches of the military service, and then armed and disciplined or trained until the whole becomes an efficient military machine, and that the revenues of the nation may be used for these purposes. The limitations are that the states must appoint the officers and train the militia according to the discipline prescribed by congress. Armed with these powers, it becomes the duty of the federal government to provide a national militia capable of warding off the partial injuries and occasional mortifications referred to by President Jackson. That it has neglected so long to do so must be attributed to a failure to fully comprehend the nature of our government and the necessities of the situation.

The first law under its militia powers was passed by congress in 1792, but was repealed and superseded by the act of 1795. This act, however, was but a slight modification of the former, and, with few changes, has remained upon the statute books for over one hundred years (having been repealed only in 1903), notwithstanding the fact that it has long since been obsolete and an object of ridicule to those who have seriously considered the ways and means of a nation's defense. Bearing in mind that we have experienced several wars, and have witnessed the inadequacy of the militia as a means of national defense, it will be interesting to read a section of our militia laws as they stood at the beginning of the twenti-

eth century, when the study of war had become a science, and the nations of the world were bending their energies toward perfecting their military systems.

Section 1628, R. S. (repealed January 21, 1903):

"Every citizen shall, after notice of his enrollment, be constantly provided with a good musket or firelock of a bore sufficient for balls of the eighteenth part of a pound, a sufficient bayonet and belt, two spare flints, and a knapsack, a pouch with a box therein to contain not less than twenty four cartridges suited to the bore of his musket or firelock, each cartridge to contain a proper quantity of powder and ball; or with a good rifle, knapsack, shot pouch and powder horn, twenty balls suited to the bore of his rifle, and a quarter of a pound of powder; and shall appear so armed, accoutred, and provided when called out to exercise or into service, except that when called out on company days to exercise only, he may appear without a knapsack. And all arms, ammunition and accouterments so provided and required shall be held exempted from all suits, distress, executions or sales for debt, or for the payment of taxes. Each commissioned officer shall be armed with a sword or hanger and a spontoon."

I seriously doubt if in 1900 the militia of this country carefully complied with the above law, or the officers were armed with and understood the uses of the spontoon. At any rate the existence on our statute books of a law long since obsolete and absurd, proves either that we are a non-military people, dazzled by the hallucination of a coming universal peace, or that the development of our military policies has been controlled and hampered by conflicting influences, the dominant one being the ever present fear of creating a military hierarchy.

Coupled with this fear has been the idea, long prevalent, that on account of our territorial isolation and the consequent immunity from foreign aggression, we have little need of armies or of preparations looking to their prompt mobilization. The result has been a conflict of ideas, and until within the last few years an utter inability on the part of our legislators to agree upon any scheme or system competent to render the militia a really efficient force when called into the service of

the union. Those who have any lingering doubts in their minds in regard to this statement have only to read the military history of our country bearing upon this subject to be convinced of the accuracy of what has been said. The war of the revolution, of 1812, our Indian wars, the war with Mexico, and the great Civil war, all bear witness to the weakness of this support which has always been considered the mainstay of the government in times of great national emergencies, a weakness, bear in mind, resulting almost wholly from inadequate national and state laws, with the consequent lack of preparation, training and discipline, and not from any inherent defects in those who compose the great body of our citizen soldiery.

When discussing matters of such grave importance we should look facts squarely in the face and seek to remedy evils known to have existed, and which will come again under like conditions and misapprehensions. The popular conception has always been that to make a soldier it was only necessary to put a uniform on a man and place a gun in his hands; or, if the weapon chanced to be a sword, the metamorphosis would produce an officer capable of caring for, controlling and leading men whom fortune had placed under his command. It is difficult to dispel popular fallacies. They become a part of the very lives of the people and sit enthroned in song and tradition, while displaced reason vainly struggles to rend the veil and resume her sway over the minds of men. Experience and ridicule alone seem capable of successfully combatting a popular delusion and of arousing a people to a realization of their errors.

A hundred years of experience has been necessary to dispel the fallacies that have attended the popular conception of what constitutes a free state, and to teach the nation that armies cannot be instantly created by calling together men from their plows and workshops, and putting into their hands weapons they may have never seen before.

In the early history of our government it appears to have been the intention of congress to entirely dispense with regularly trained troops, and to depend wholly upon militia called out as the emergency arose. At the same time it failed to provide measures for making the militia an efficient force cap-

able of taking the field when called upon. The result has been disaster, and an unnecessary expense of blood and treasure. After the defeat on Long Island, August 27, 1776, Washington wrote to congress as follows:

"Our situation is truly distressing. The check our detachment sustained on the 27th ultimo has dispirited too great a proportion of our troops and filled their minds with apprehension and despair. The militia, instead of calling forth their utmost efforts to a brave and manly opposition in order to repair our losses, are dismayed, intractable, and impatient to return. Great numbers of them have gone off—in some instances almost by whole regiments, by half ones, and by companies at a time. This circumstance of itself, independent of others, when fronted by a well appointed enemy superior in number to our whole collected force, would be sufficiently disagreeable, but when their example has infected another part of the army, when their want of discipline and refusal of almost every kind of restraint and government have produced a like conduct but too common to the whole, and an entire disregard of that order and subordination necessary to the well doing of an army and which had been inculcated before, as well as the nature of our military establishment would admit of, our condition becomes still more alarming, and with the deepest concern I am obliged to confess my want of confidence in the generality of the troops."

A little later he again wrote to congress:

"To place my dependence upon militia is assuredly resting upon a broken staff. Men just dragged from the tender scenes of domestic life, unaccustomed to the din of arms, totally unacquainted with every kind of military skill (which is followed by want of confidence in themselves when opposed by troops regularly trained, disciplined, and appointed, superior in knowledge and superior in arms), are timid and ready to fly from their own shadows.

"Besides, the sudden change in their manner of living, particularly in their lodging, brings on sickness in many, impatience in all, and such an unconquerable desire for returning to their respective homes that it not only produces shameful and scandalous desertions among themselves, but infuses the

like spirit in others. Again, men accustomed to unbounded freedom and no control cannot brook the restraint which is indispensably necessary to the good order and government of an army, without which licentiousness and every kind of disorder triumphantly reign. To bring men to a proper degree of subordination is not the work of a day, a month, or even a year, and unhappily for us and the cause we are engaged in, the little discipline I have been laboring to establish in the army under my immediate command is in a manner done away by having such a mixture of troops as have been called together within these few months.

"Relaxed and unfit as our rules and regulations of war are for the government of the army, the militia (those properly so called, for of these we have two sorts, the six months men and those sent in as a temporary aid) do not think themselves subject to them, and therefore take liberties which the soldier is punished for. This creates jealousy, jealousy begets dissatisfaction, and this by degrees ripens into mutiny, keeping the whole army in a confused and disordered state, rendering the time of those who wish to see regularity and good order prevail more unhappy than words can describe. Besides this, such repeated changes take place that all arrangement is set at naught and the constant fluctuation of things disarranges every plan as fast as it is adopted."

Born of bitter experience and wrung in anguish from the heart of the great commander, these words describe, as no others can, the danger and folly of relying upon untrained troops. Bravery in battle is not enough. Most men are brave, and when their timidity and nervousness are overcome by discipline and familiarity with their arms, their commander has little to fear from them when the shock of combat comes. But the trials of battle are only a fraction of those the soldier is called upon to undergo. It is in the camp, in the bivouac, and on the march that the lack of thorough training and preparation has the most deadly effect, and carries in its wake a grim but fruitful harvest of disease and death. Is it a wonder that Washington protested against the use of untrained troops and officers? The marvel is that with his experience and that of so many others with such troops, we should have delayed a

hundred years before taking adequate steps to provide an efficient national guard. The disparity, however, between trained and untrained troops is lessened when the latter are led by an experienced officer.

The following is quoted from the memoirs of the famous revolutionary war cavalry leader, Henry Lee, to show the value and effect in battle of trained officers in command of undisciplined troops. It was at the battle of Camden in 1780, where General Gates with about 4,000 continentals and militia was defeated with a loss of about 1,800 men.

The Americans were drawn up with the continentals on the right, and the militia, consisting of two brigades, on the left, supported by a small reserve. At the first onset the militia, with the exception of Dixon's North Carolina regiment, threw away their arms and fled. This regiment, supported by the reserve, not only held its ground for a time, but actually charged the enemy in their front and captured many prisoners. At the same time the continentals on the right were steadily forcing the British from the field. In the meanwhile, however, the British right finding itself unopposed, on account of the flight of the militia, swung to the left and overlapping the weakened American line, rolled it up, and the battle was over. The intrepid Baron De Kalb, who commanded the continentals, was wounded eleven times and captured, dying shortly after. Had all the militia stood their ground as well as Dixon's regiment, the Americans would have had one less defeat to mourn. This is what General Lee says:

"None, without violence to the claims of honor and justice, can withhold applause from Colonel Dixon and his North Carolina regiment of militia. Having their flank exposed by the flight of the other militia, they turned with disdain from the ignoble example, and fixing their eyes on the Marylanders whose left they became, determined to vie in deeds of courage with their veteran comrades. Nor did they shrink from this daring resolve. In every vicissitude of the battle this regiment held its ground, and when the reserve under Smallwood, covering our left, relieved its naked flank, forced the enemy to fall back. Colonel Dixon had seen service, having commanded a continental regiment under Washington. By his

precept and example he infused his own spirit into the breasts of his troops, who, emulating the noble ardor of their leader, demonstrated the wisdom of selecting experienced officers to command raw troops."

Years after, General Lee, while again commenting upon the valor of this regiment, took occasion to express in no measured terms his disapprobation of a policy that sent untrained troops into battle. He said:

"Here was a splendid instance of self possession by a single regiment out of two brigades. Dixon had commanded a continental regiment, and of course to his example and knowledge much is to be ascribed, yet praise is nevertheless due the troops. While I record with delight facts which maintain our native and national courage, I feel a horror lest demagogues who flourish in a representative system of government (the best, when virtue rules, the wit of man can devise) shall avail themselves of the occasional testimony to produce a great result.

"Convinced as I am that a government is the murderer of its citizens which sends them to the field uninformed and untaught, where they are to meet men of the same age and strength, mechanized by education and discipline for battle, I cannot withhold my denunciation of its wickedness and folly."

In 1790, General Harmer was defeated in an attack upon an Indian village near the present city of Fort Wayne, Indiana. The evidence before the court of inquiry that investigated his conduct, showed that amongst the militia were a great many hardly able to bear arms, such as old, infirm men and young boys; also that there were many substitutes.

The following year General St. Clair was sent against the Indians with about 1,400 men and was defeated by a nearly equal force with a loss of 632 killed and 264 wounded. The committee of the house of representatives appointed to investigate this disaster reported that the militia appear to have been composed principally of substitutes, and totally ungovernable and regardless of military duty and subordination.

Disaster may overtake the best trained troops, but had the militia that took part in the above mentioned engagements

been trained and commanded as the experience of former wars then dictated, in all probability we would now be spared the humiliation and disgrace of these defeats.

Notwithstanding the bitter experience of the preceding thirty six years the people still adhered to the popular delusion, and the nation, at the outset of the war of 1812, found itself wholly unprepared for the coming conflict. The regular army was small and poorly organized, while the militia was such in name only. In enthusiasm the people were not wanting. The cry was, On to Canada! as at the beginning of the Civil war it was, On to Richmond! Defeats, disasters, wholesale desertions, insubordination, mutinies, incompetent officers, political jealousies, refusal of states to furnish militia when called upon, and of the latter to cross the frontier, though their comrades were engaged in unequal battle on the other side, national humiliation and disgrace. And these were Americans imbued with the same spirit of patriotism and love of country that actuate us to-day. The dark record is not flattering to our national vanity, and our historians, after dwelling upon the one or two land victories that are really creditable to us, turn with relief to the sea, where our brilliant naval operations electrified the world. Yet a study of the campaigns of this war, ending though the majority did in humiliating disaster to our arms, furnishes some of the most instructive lessons in our nation's history. General Lee said that a government that sent uninformed and untaught soldiers into the field was a murderer of its citizens. Read carefully the history of this war and see if he is not right.

The government, however, learned little, or what it did learn was soon forgotten, for we find that when General Taylor, in 1845, was sent to the lower Rio Grande with a small force of regulars to oppose any attempt on the part of Mexico to invade the state of Texas, he was instructed, should his own force prove inadequate, to call upon the governors of the nearest states to furnish contingents of militia. This meant the use of untrained troops again, for neither congress nor the states had at that time taken suitable measures to place the militia on an efficient basis. But circumstances, which marked the introduction of a new feature into our military

policy, rendered this step unnecessary. This was the use of volunteers, a measure growing out of the fact that congress could not call forth the militia to invade a foreign country, and was therefore compelled to raise armies under its general power to raise and support armies.

But it matters not by what name troops are designated, be it militia, volunteers or regulars, their efficiency and usefulness will be measured, other things being equal, by the amount of military education and training they may have received. According to all the laws of logic and experience this statement should be axiomatic. Unfortunately to our people, it is not; but to make it as obvious as possible and to emphasize it by lessons drawn from our own experience has been, and is, one object of this paper. We could continue citing instances until this paper grew into a volume, and the volume into a library. Our annals are replete with lessons striking enough to convince the most skeptical—lessons not confined to the early history of our country, but extending down to the Spanish-American war, where the lack of preparation was so glaring as to arrest the attention of the most casual observer. But enough has been said to show a nation must have some definite military policy, and, no matter what that policy is, one feature must be that the government should not send into the field inefficient or untrained soldiers.

In this article an attempt has been made to emphasize the fact that all military forces, whatever their nature, should be thoroughly trained before being called into actual service, and that the failure to observe this military truism during the century and a quarter of our national existence rendered the militia, upon which the country depended during that period, an inefficient and expensive force. An unformed policy, confounding military resources with military strength, and leading to imperfect and ill-digested legislation, is mainly responsible for this. But experience is the great teacher, and to-day our people seem to realize that the military profession is indeed a profession, and that soldiers cannot spring into existence panoplied for war, as did Athena from the brain of Jupiter.

From untrained militia the states have gradually evolved

trained forces which they called the national guard. But they were not in reality national forces, though they might be called into the service of the union as militia. There was no uniformity, little cohesion, and a lack of system, with the consequent inability to effectually coöperate with the regular army, which should form the nucleus of all. Then comes the new militia act, the Dick bill, and the national guard of the states becomes the national guard of the nation. Our military policy takes form, a system is evolved harmonizing discordant elements and enabling all to work for one common end. But the picture is not entirely without shadows. The way has been blazed, but much work yet remains to be done. It will be observed that the provisions of the new militia act are operative mainly upon the states, and not upon the national guard direct. Aside from requiring on the part of the states certain coöperative work as a condition precedent to their receiving allotments of money, the law is without sanction. Whether or not this is an element of weakness remains to be seen. The duty of the states is plain. Their legislation concerning the national guard should be along the lines laid down by the federal law. Otherwise confusion and lack of harmony must follow. For the national guard only such men should be enlisted as would probably pass the mustering officer when they are called into the federal service. So also the state codes of discipline, their military law, should, so far as possible, be assimilated to that governing the regular forces. The reason for this is obvious. Simplicity begets efficiency, the real test, the watchword of the army. Officers detailed to inspect or on duty with the national guard, or with any troops, should hew close to the line, regardless of criticism.

Laws and regulations can call armies into existence, but can not alone mould them into shape. After all has been said and done, the real test of the efficiency of a military establishment is found in the ability, zeal and integrity of its officers. It is they who breathe into the legal organism the breath of life and make of it a living potentiality. The future of the national guard is in the hands of its officers. They are the guardians of the trust, the nation the beneficiary, and the people are watching how the duty is performed.

PEACE TRAINING OF OFFICERS.

BY EBEN SWIFT.

[Eben Swift, instructor in military science in the United States Infantry and Cavalry School and Staff college: born May 11, 1854, in Texas; appointed to United States Military academy, 1872; second lieutenant 14th U. S. infantry, 1876; first lieutenant, 1884; captain, 1893; major 7th Ill. vol. May 1898; lieutenant colonel, 9th Ill. inf. July 1898; colonel, 4th Ill. Inf. Nov., 1898; major, Porto Rico battalion of infantry, 1899; major 1st cavalry Jan. 24, 1903.]

The idea of turning out trained soldiers from a university is, I know, ridiculed by many, who fail to see the analogy between other professions and our own. No one refuses to recognize the graduates of the schools of medicine, electricity, law, engineering and others, as competent in their professions, but it is natural to ask the question, How can soldiers obtain the necessary practice in their profession, which in all peaceful arts is so easy to secure? Inability to solve this question as wars became rare, caused the military art to fall behind other arts and led to some of the greatest failures in history. It was maintained that the theory alone could be learned in time of peace, so that when war actually did occur, the armies found themselves overwhelmed with knowledge that was fine in peace but useless in war.

The Germans had their attention directed to this matter by their own misfortunes, and decided that if a school of war were not possible, the next best thing was to make their peace training come as closely as practicable to the actual condition of war. Under the guidance of the greatest of modern generals, who in the years preceding his great successes was commonly called the schoolmaster, new methods of giving the practice were introduced in the schools and the army. Then after three successful wars in six years the old fallacy that war alone teaches war was dispelled. The chasm between practice and theory was bridged at last—an undertaking which was long supposed to be impossible in our profession, although easy in others. It cannot be said, however, that the world ceased to view the university soldier with surprise and suspicion. It is a part of the slow development of a great idea.

From the club of primeval man to the magazine rifle of to-day the changes have not been rapid. The idea of a flank attack was as slow to dawn upon the human mind as the forging of metals was to be comprehended by the artisans. The art of issuing a field order to a large command came more slowly than the steam engine and almost as late as the telephone.

The practical test of the new method wrought the third revolution in the art of war in one hundred years. Frederick the Great had inherited a ready made army. It had been trained in time of peace to a high degree of proficiency without especial reference to its usefulness in war, but he found at once that he could march all round his enemies and strike where he pleased. His victories quickly proved him to be the greatest soldier of his time, and his army became the accepted model for the world. Military men of every nation made pilgrimages to his maneuver grounds at Potsdam, Spandau and Berlin, and sought eagerly for the slightest bit of information about his methods. A system of parade ground maneuvers, which leaves out of question the terrain, cannot fail to strike us as strange at this day. Frederick had only been dead twenty years, and his army still contained some of his best soldiers, when the Corsican captured his capital. A new master had come who knew the relation between the ground and the battle, a matter which had been ignored until then. This single idea developed by a man of wonderful mental and physical capacity placed the French nation at the front of the world. Then we began to follow blindly the ways of the French soldiers, adopted their words into our military vocabulary, and for fifty years studied Napoleon Bonaparte Since the battles of Metz and Sedan we have turned again to the Prussians.

Our own military history, great as it has been, does not encourage us to ignore these lessons taught by foreigners. A certain regiment on our frontier in the spring of 1861 contained about thirty five officers. It was a good regiment and had been officered with great care. In a rather small way its experience had been great, for it had much active work chasing Indians over a great expanse of country. Within a few months at least half of the officers of that regiment were generals of

the line, and four of them were soon at the head of great armies. When it came to applying their previous knowledge to greater questions than came up at a frontier post or on an Indian scout, they found themselves without experience, instruction or precedent. It was a year and a half before the troops which they organized and commanded were capable of really good work, notwithstanding all the aid that money, patriotism and ability could bring to help. At the present day the country will expect quicker work than that. It is absolutely necessary, now that modern methods are beginning to be developed all around us in the world, and when readiness for war is the first requisite of a great state.

As I have intimated, the early experience in the Civil war was a painful one. The first battles excited the risibilities of the world, and are said to have brought from the greatest soldier of the age the cynical remark, that he was not paying attention to the war in America, because he was not interested in the maneuvers of an armed mob. Whether true or not, that statement well expresses the common idea then held of our military efforts—an idea that was not dispelled for years. The sad experience of the first Bull Run was not improved nearly a year later when the battle of Shiloh showed every fault of raw troops, notwithstanding all the efforts at drill and discipline which had been applied by the best soldiers we had. Without entering into the disputed points concerning Shiloh, we cannot fail to agree on the facts, that one army passed several days forming line of battle within sight of the opposing camp, that a commanding general was not able to bring up a command six miles away, and that at the close of a day of battle only about ten thousand out of more than eighty thousand who started in were on the line of battle. The army of the Potomac passed under the command of its fourth commander before the purposes, uses and organization of cavalry received attention. Artillery was not in a better condition. Such things appear strange to amateurs as well as to professional soldiers. But it is also strange that the magnificent Roman armies should have been fooled and ruined by the simple stratagems of Hannibal, or that the Grecian generals should have been confounded by the newness of the idea of a flank attack. A new idea

in war is as slow to arrive as any other momentous event in the history of mankind.

Not the least of our sad experiences during the Civil war was the fact, that many excellent officers were ruined before they had a fair chance to learn, while others whose mistakes were just as great were permitted to goon and learn. The point of greatest importance for us to consider is the fact, that all had to learn. No man ever jumped into the field of battle, fully armed and equipped, like the dragon's brood in the fable. Time went on, and at the end of four years our armies were equal to any that history knows of. In maneuvering and in marching, the leaders and the troops were unsurpassed. It was an army formed in the school of experience, such as Napoleon found in his hand at the end of the wars of the French revolution, and with which he was able to fight Europe for twenty years. It was such an army as a Hannibal or an Alexander inherited from his father. Such armies of course are perfect in their way. The process by which they learned may not be improved upon. If war were the common state of mankind, we might continue to rely upon the same school and to believe that no other would suit.

The adoption of a suitable system of peace training did not come quickly. It was years before it was evolved, and it was the result of many independent lines of thought. Some ideas ran into extremes, as in Kriegsspiel, for instance. It was long before it was possible to harmonize them all into a consistent system in which each had its place. The term deductive system or applicatory system, best describes the whole. It had its inception in the necessity for supplying troops in time of peace with more of the experience and training which they get in actual war. After learning the theory, it was thought best to apply it to various concrete cases, which were made as practical and real as possible. Tactical schemes were worked out, based on probable and real military situations. The principle and the application were given at the same time, and thus both were firmly fixed in the mind.

In working out this idea it soon became apparent that the new system possessed some decided advantages, which might even be claimed as affording better instruction than

the old school of experience in actual war. In peace we can learn one element of one problem at a time, turning from one to the other in order. In war, the ground, the troops, your own decisions, the orders of your superiors, the killed, the wounded, are crowded upon you at once with a thousand variations. It is like taking the university course without having studied the primer. The greatest difficulty in peace training is in the length of time it takes to acquire knowledge in this way. The variety of situations is so infinite that no ordinary school course could do more than indicate the general object and character of this kind of study. We may only begin by producing a small variety of situations, presented and applied in such a way as to make the lesson like real experience. To form the military eye, as it were, to develop a proper habit of thought and action, and to render decisions quickly and accurately, we must rely on practice and intelligence before the highest result will be reached. In the same way that the habit of the drill ground is carried into battle by well disciplined troops, we hope to see the maneuvering habit burned into the soul of every man who is called to command.

The applicatory system has its value for troops, but its value for those who exercise the higher duties of command is greater. Here it is possible to reproduce in the section room almost exactly the conditions of a real campaign. In fact, we can take an example from history and work it out from our own point of view, aided by the light of experience and criticism. We shall lack the sense of responsibility, the excitement and the physical strain. We gain by being able to submit our decisions to the test of criticism and study. In the real campaign we have not the time to digest our experience. In the imaginary campaign we exclude every matter that would tend to divert the untrained mind, from the particular subject in hand.

The results of the new methods are startling indeed. We might expect nothing but success from a nation which for centuries had bound her best and brightest men to the trade of war. But when the Chilians, the Turks and the Japanese, adopting these ideas under good instructors, astonish us by their military proficiency, obtained in a marvelously short

period of time, we must seek for the cause in the correctness of their system of training. We must realize that wars are to be conducted by peace trained soldiers, led by peace trained generals, who are assisted by a peace trained staff. Under this careful system we must learn how to develop safe leaders for our troops. Brilliancy of the old kind has little of its old chance in these days of intrenchments and long range artillery. Promotion is slow and men do not reach high position in youth, but veterans of forty years of peace service will take the field with all the confidence of men who have fought in a hundred battles. This has been done often within the last forty years. It is the modern development of war. Perhaps under the new tests we may reverse the old maxim, that in our profession the fittest do not survive.

The field maneuvers represent the supreme effort in time of peace to show an army ready for war. They form the graduating thesis of the applicatory system of instruction. In them the troops as well as the leaders show all they know about their profession. But as field maneuvers are merely a necessary preliminary to real war, so must they also be preceded by a careful course of elementary training. Without it the maneuvers would be as unsatisfactory as war itself without preparation. The leaders would show vacillation and indecision in every form. The troops would be placed in false and unreal positions, which they would be quick to discover but unable to remedy for themselves. The whole would lose the character of a military exercise and degenerate into an old time sham fight or militia muster. To teach a man to swim let us not throw him into deep water before he can paddle a bit in the shallows.

Taking account only of the duties of officers, we may divide them into two classes—those conducted indoors and those conducted in the open. In the first class are map problems and map maneuvers; in the second class are staff rides or terrain exercises and maneuvers. I will discuss them in the order named.

Starting out on the broad principle that education consists in thoroughly learning one thing at a time, we place map problems at the head of the practical course. The map

problem is simply a problem, admitting of a written answer, solved by the aid of a map. The questions are such as require a study of the map, and, under the usual conditions of service, would be solved by the commanding officer and his staff. It is natural that the map should call for our first attention because we ordinarily see it before we have a chance to examine the ground which it represents. An early experience is thus obtained of the difficulties which are encountered at the beginning of every military operation. It is better than the corresponding experience in active service, because you have nothing to divert you, plenty of time to make up your mind, and full opportunity to discuss and criticise. It is supposed that training of this kind develops the judgment in such a way as to lead to prompt and rapid decisions. The mind is led into the same channels it would follow in active service; you study long over some order that would perhaps be given verbally and without preparation, and when the day of action comes, men will say that you are filled with quick and happy inspirations in the field A great soldier has left on record the statement, that it was not genius that revealed to him the sudden and unerring solutions of military problems that often astonished the world—it was long study. I brood upon the map, he said. The study of the map, then, helps us to give the proper direction of events, and to formulate definite plans of action. In other words it is a study of orders. We will have a large number of map problems with solved solutions; after that there will be problems of original discussion and solution. At the completion of this one will be able to solve most of the ordinary situations and issue proper orders to meet them.

One step further than the map problem is the map maneuver, or the Kriegsspiel of the Germans. It is simply an exercise where we show the operations of war by the movement of small blocks, representing troops, over the surface of a map. It supplies an idea of the moving incidents of the campaign and those matters which depend upon the factors of time and space, and the various relations between the troops and the ground, such as the employment and deployment of lines and columns, rates of march, the capacities of offensive and defen-

sive positions to commands of certain size. Having, therefore, filled the mind with some military situation; having formed your plan and issued your orders, and made your dispositions, the whole may be tested by map maneuvers.

The original idea of the Kriegsspiel and, in fact, the leading idea of every practice of this kind, up to a recent date, was to make it a battle exercise, in which decisions were given as to the actual loss in killed and wounded, the effect of fatigue and demoralization, and the influence of chance on the final result; in fact, all modifying factors that could be thought of were duly considered. It made an exceedingly complicated system, requiring much study and practice. Its many difficulties limited its use to a few localities where there were exceptional advantages in its favor. Recent improvements in weapons of war and important changes in methods of attack and defense have caused doubt to be felt as to the accuracy of former rules under the latest conditions, and gradually the battle idea has become eliminated from the exercises. This simplifies it greatly and leads to its logical use as an aid to instruction. We will use it simply as an exercise in maneuvering troops up to the moment of actual contact. Prior to this the small combats of minor importance are settled in a general way by the decision of the umpire. As soon as the plans of both sides are developed and there only remains the final test of battle to decide the result, the screen is removed and the umpire discusses the final situation. At present it is sufficient to say that this kind of instruction is officially recognized in most military countries. In many of them it is an obligatory part of the military education of officers, and in its simpler forms it is used for the indoor instruction of noncommissioned officers and men. These things therefore are claimed for the maneuvers on the map:

1. It supplements previous exercises by practice in map reading.

2. It has the advantage of presenting the whole situation and not a limited portion of it to view.

3. It gives practice in issuing, interpreting and executing orders.

4. It gives practice in showing the principles and ap-

plication of strategy in tactics. In the same way it is a useful adjunct to the study of military history.

5. It gives practice in making quick and accurate decisions. In the application of principles it shows in a few hours operations that would ordinarily consume many days.

The next form of exercise has been called war ride, staff ride, terrain exercise, and so on. The troops are still imaginary, but the map is replaced by the real ground. The officers work out their problems in the open. In this way they come to understand the relations between the ground and the map, they see the limitations that exist in the picture of ground given by the very best map, and they verify the principle, that while general directions are given from the map, the details must be left to the commander on the ground. The troops remain imaginary, because the idea is still to develop and persistently to cultivate a perception of the capabilities of the ground itself, a quality which is all important and exceedingly rare. It means an ability to grasp the military features of a landscape, just by looking at it, to conceal your own designs and to discover those of the enemy from slight indications, to make proper dispositions for every emergency, to select an objective and not to lose it. It is evident that the presence of the troops would tend to divert the attention and that the tendency would be to devote one's self to the personal direction of the troops. There are good reasons why troops need not be present in preliminary exercises of this kind.

The exercise may be conducted under a dozen or more forms. In all of them the object is to visit some piece of country where the various conditions of military study are imagined just as if the landscape were full of troops. For instance a detail of officers could ride out and select ground for future battles in the neighborhood, just as German staff officers are said to have done in France before the war of 1870, and just as we know that the Confederate general, Johnston, did before he retreated on Atlanta in 1864. On a smaller scale we might indicate how we would defend a village, attack a wood, cross a river, ascend a height, or search a country for another force.

Next come maneuvers, in which the officers assume com-

mand of troops in the open. Here again we proceed ordinarily through several stages of instruction and practice. At first the enemy need not be indicated, or he may only be outlined by flags and a few men representing larger bodies of troops. Now for the first time you have to consider the powers of the troops to undergo exertion. The practical application of this is that the energy of troops can be reduced more by fatigue than by the fire of the enemy. Where we lose one man by a bullet, we shall lose three or four from fatigue or other disorganizing causes.

Finally opposing forces are introduced, the fire is represented by blank cartridges, and we endeavor to represent the conditions of hostile contact. The guiding principle for officers will be that tactical skill in officers of low rank will be necessary to success. By tactical skill is meant the ability to judge correctly and to maneuver properly over varied ground. An easy self confidence and a readier assumption of the leadership of men in trying situations will replace the hesitation, contradictory orders and delays of the man who has never tried his powers before.

So far we have considered only the value of experience gathered by each man for himself and by himself. There is still another kind of experience which we should learn to use, and that is the experience of others. The causes of the triumphs and disasters of the past form a class of study which will best lead us to an appreciation of the meaning of strategy. In former times these subjects were made the bases of elaborate treatises, logically arranged, with principles boldly stated and examples cited to fit each case. The fault of such a system is in the fact, that this strategy is often an afterthought of the ingenious commentator who quotes the case, and that historical incidents can generally be found to illustrate almost any kind of a principle. The old idea of teaching the art of war as a doctrine is now changed. The higher theory as taught by the books is put aside, and we study the campaigns first and pick out the strategy afterwards, thus reversing the former method. Here, then, we have another brilliant example of the study of principles by their application. Study attentively, says Napoleon, the campaigns of the great masters.

That wise advice was not understood for a long time. It was his own practice, as we now know, but the added importance of the study of military history in the curriculum of the war college is a recent idea.

It would be easy to adopt a course of study, filled with the military pedantry of our own and other ages, and this is a common error with those who attempt military study. Likewise, as all arts and sciences are brought to assist in modern warfare, we might supplement our previous studies by technical work, which would undoubtedly be of use. But none of this would fill the greatest void in our education, and practice us in the hardest duties of our office, or prepare us for the exercise of our wisest and soundest judgment. Military study must include not only the direction of troops as fighting bodies, but all the arrangements concerning their marching, rest and safety, their organization, equipment and supply. It involves the translation of these ideas into proper orders, it covers the collection and record of all operations. Not the least of its objects is the preparation of problems, the conduct of field maneuvers, and the duties of umpires. Our goal is the leading of troops; our ambition is to learn the art of commanding men.

The wars of our day have changed in character. No longer waged in the name of religion or to satisfy the jealousies of reigning houses, they now result from great national movements, aims and ambitions. The consolidation of nations on racial lines makes greater the national interests involved, and probably adds to the bitterness of war. The advance of civilization may not be an unmixed blessing to humanity. It makes new conditions necessary to national existence. Such are a market for surplus products, work for all workers, room for the overflow of population. In meeting these conditions, diverse interests will clash and war will result, with ever increasing skill and ever growing armies and navies. Whether the wars for the rights of colonization and trade will reach us in our day, is hard to say. We may be sure, however, that greater efforts than ever before will be made to attain the ends of war, and that the problems of military men will be correspondingly great.

THE ARMY AS A FACTOR IN THE UPBUILDING OF SOCIETY.

BY MERCH B. STEWART.

[Merch B. Stewart, captain U. S. army; born Virginia, June 24, 1875; appointed from New York to the United States Military academy, upon graduation in 1896 was appointed additional lieutenant to the 11th infantry, second lieutenant, 8th infantry, 1897; first lieutenant, October, 1898; captain, June 12, 1901; has written several articles for military journals.]

To many the superscription of this article may come in the nature of a surprise, for while the people of the United States are not inappreciative of their fighting forces, they have not as yet been educated up to the point of regarding them in the light of agencies of social improvement. When we consider that the soldier's sphere of action is ordinarily so remote as to preclude anything like intimate contact or association with the great mass of the people, it is not surprising that such should be the case.

In time of peace the work of the army is conducted in a manner so unobtrusive as to escape comment except on those unfortunate occasions when its internal discipline brings some offender temporarily to the notice of the press. It is for this reason, primarily, that the popular conception of the army is less flattering than the work of that body would seem to merit. Unfortunately, too, the army has for years labored under the burden of a popular theory which relegates to it the function of a dump ground for recalcitrants and derelicts, a theory which owes its origin, if such there be, to the days of other, and happily past, epochs.

With the rest of the world the army has advanced, and in its advance has lost none of the worthy traditions inherited from a sturdier if less erudite generation, and therein it possesses an advantage over contemporary society, for, controlled by the same civil restrictions, where society is but indifferently governed by a loosely constructed fabric of convention, the moral atmosphere of the army possesses the additional safeguard of a code whose transgression means disgrace and ex-

pulsion. Succinctly the atmosphere of the army of to-day is one of cleanly lives, honorable dealings and enthusiastic devotion to country, an atmosphere enforced by a system of rigid discipline whose object is the correction and encouragement rather than the punishment of the individual.

The effect of such an atmosphere on the young man who enters the service can but be beneficial and it is in this influence which it exercises over the characters, often during a formative period, of those who from time to time form a part of the service, that the army plays an important part in the upbuilding of society. As a vocation, it offers none of the brilliant opportunities to be encountered in civil life, a condition which limits the sphere of its influence to a class deprived of many advantages. That such is the case does not in any way detract from the meritoriousness of its achievement. For the civilian, improvement of any description is to be obtained only by an extra expenditure of time and energy over that necessary to his maintenance, while in the army, whatever of improvement may accrue to the individual, comes to him as a part of his routine labor for which he receives compensation.

In order to properly evaluate the benefit of army influence over society in general it is first necessary to establish some standard whereby to measure the worth of man as a citizen, and to identify the results of army training with these standard characteristics. Every race, indeed almost every age, of man has established for itself some such standard. These standards have of necessity been functions of the philosophy, enlightenment and necessities of the particular ages to which they have pertained, and obviously, have been ever variable and ever varying. A study of the various standards of well-defined ages, however, reveals the possession of much in common, and it is from these more enduring characteristics that we should form a standard for the evaluation of the desirable citizen.

In no age of the world has physical perfection failed of appreciation. Greece was unstinting in its devotion to its culture and rewarded its successful attainment with extravagant honors. With Sparta it assumed almost the proportions

of a religion. Rome delighted in the prowess of its gladiators, while feats performed in the tournament typified the ideal sport of the early European courts. Bodily vigor and strength wrested this country from savages, defended it in rebellion and against invasion, and has made it whatever it may stand for to-day.

With the dawn of civilization came its necessary concomitant—law, and obedience to the law has been recognized as essential to domestic and foreign relations from their inception. Love of country, to the credit of mankind be it said, is an almost universal characteristic of every people of every degree, and the pride with which each nation honors its defenders is sufficient to fix the place of patriotism in any standard of character. These three characteristics, physical perfection, obedience to the law and patriotism, may be said to have received the sanction of ages as fundamental characteristics of the valuable citizen. It is doubtful if these attributes, sterling as they are, would to-day be accepted as constituting the full measure of good citizenship, but, as furnishing the fundamentals for all true development, they must be recognized as virtues to be prized in the citizen of any day. If we admit the truth of this assumption, the influence of the army becomes apparent when we consider the transformation which the raw material undergoes in the making of a soldier.

From the moment that the recruit enters the service the responsibility for his welfare is shifted from his shoulders to those of officers trained in the art of subsisting and maintaining troops. By them he is properly fed, clothed, housed and attended in sickness, and, in return, he has but to lend his will and energy to his instruction. In this he becomes the immediate object of attention of at least one officer and a dozen non-commissioned officers, all of whom add to their natural professional zeal a pardonable pride in the organization to which they belong. His instruction is given all the care bestowed by the artisan on a delicate part of a delicate mechanism for on the perfection attained by the individual depends the degree of perfection which may be reached by the company and theron depends the professional reputation of its officers.

He is taught that cleanliness is essential to health and

decency, and by constant cleanly association with others he comes to regard it not as an occasional luxury but as a necessary adjunct of his comfort. He is given substantial and becoming garments and is supervised in their care and preservation until such supervision becomes unnecessary. By instruction and example he is made to understand that nattiness and neatness in personal appearance are essential elements of respectability. By judicious restraint he is taught the distinction between order as inspired by fear of the law, and order induced by pride and love of moderation. His life is ordered and arranged for him after the manner best calculated to benefit him and at the same time subserve the interests of the military service. To this end he is subjected only to that restraint necessary to the observance of discipline. In the end he becomes habituated to cleanliness, order and moderation to the degree that the absence of any one of them is a source of actual discomfort to him. He grows to recognize that discipline is aimed as much at the misbehavior of others, whereby he may be discomforted, as at his own shortcomings. He learns to respect it as a protection rather than a menace, and in this knowledge he becomes possessed of the fundamental principles underlying all law.

In the meantime his physical welfare is the subject of careful consideration on the part of those responsible for his training. He is accorded much the same inspection a builder gives the material he puts into a structure, and, his defects once detected, he is given judicious exercise to remove or alleviate them. His food, plain and wholesome, is prepared in the manner best calculated to nourish him and his habits are so regulated as to build up his physique. Almost imperceptibly and perhaps entirely unconsciously, he is physically remodeled and developed. His rounded shoulders are straightened and broadened; his narrow, flattened chest is deepened and widened; his legs and arms are trained to respond with the minimum effort and maximum grace to every impulse of his will; his careless carriage and unnatural gait have been replaced by the healthy upright posture and easy swinging stride that distinguishes the soldier the world over, and it may be that what he has regarded as a mere recreation has been the saving

grace to his dormant tissue. Wholesome living, abundant exercise and orderly habits have imparted a healthy color to his skin and clearness to his eyes. The nature of his occupation has inculcated in him a spirit of confidence and self reliance which make him a more forceful member of any profession he may choose to enter.

Morally he is not neglected, though in this respect his education is gained in great part by absorption from his environment. He is a member of an organized disciplined family, the comfort and security of which is dependent upon the honesty and integrity of the individuals composing it. The community character of the soldier's life furnishes abundant opportunity for petty dishonesty and it is the knowledge of this insecurity which leads soldiers to guard so jealously their common interests. By localization the insidious character of crime is more indelibly impressed upon them and thereby rendered more abhorrent. In his daily duty the soldier learns that truthfulness is necessary to its proper performance. He comes to realize that the slightest deviation from the truth on the part of others may lead him into error and consequent punishment or may endanger his own and his comrades' safety. As a matter of self protection he demands undeviating truth from others and the habit of truth telling insinuates itself upon him until it becomes not a matter of expediency but one of natural inclination.

As a school wherein may be fostered and developed every sentiment of patriotism, nothing can surpass the army with its traditions antedating even the republic itself. In his daily life the soldier treads the same paths over which countless heroes have passed before him. His daily associations are constant reminders of the achievements of those whose names live in the history of a grateful land. The uniform he wears has become a symbol of courageous devotion to the principles of the country he serves. In a measure he feels that he is an active factor in the making of history and in that history he takes the personal pride of the artisan in his work. Nor does he abandon the habits formed or sentiments developed in the service when he separates from it. In a modified form, adapted to the circumstances of his new life and surrounding, the army

habits and training cling inseparately to him. It may be that he will never care to re-enter the service, but there will never come a time when the fluttering of his country's flag or the sight of his discarded uniform will not awaken in his mind cherished recollections of his military service or stir in his breast emotions which better fit him for the life of a loyal citizen.

Eventually the ex-soldier becomes the head of a family and the influence of his army training is extended to the domestic circle. His children are reared in an atmosphere of cleanliness, order and discipline. In the child is reflected whatever of patriotic sentiments the father may cherish and in the unconscious hero-worship of the child these sentiments are exaggerated and intensified. The number of men so trained and returned to civil life, while not large, is nearly unvarying and in time is sufficient to constitute a considerable factor in society. In round numbers a third of the army annually leaves the ranks to engage anew in civil pursuits. In the course of ten years an army of nearly two hundred thousand men is distributed throughout the land to enter the life of thousands of communities. If we are to believe that a majority of them assume the responsibilities of the citizen in all that it implies of domestic relations and public-spirited effort, the influence of the army is seen to cover a large and comprehensive area.

Of the class who do not so return to civil life, but who remain in the army to make a life work of it, the army and the country have no reason to be other than proud. In the nature of things there must be in every generation a proportion of misfits which through misfortune or lack of advantages finds itself left behind in the race of life. Such a fate does not necessarily imply a lack of worth or ambition, but, too often, simply of opportunity. Many such find places in the army and in the profession of arms find a congenial calling which, while not brilliant or remunerative, is honest and honorable. In it they are respectable members of society, leading honorable independent lives and standing ready in emergency to give value received to the country they serve.

Among those returned to civil life from the army is a class

to which disparaging reference is too often made. I refer to those unfortunates who have dishonorably terminated their connection with the service. The published statistics of this class can hardly be accepted as a fair criterion of the amount of crime in the army, for the reason that many such discharges are the results of purely military offenses and are without criminal significance. In the majority of cases the punishment is the result of an inability to adjust the previously conceived ideas of personal freedom to the moderate restraint of army discipline. Many of this class realize when too late the error into which they have fallen and would gladly re-enter the service if permitted to do so. In every military prison there are scores of young men who would undoubtedly serve honorably and with benefit to the army, did the military code permit of their re-enlistment. The majority of those returning thus to civil life bear no resentment toward the military service and realize fully that they have only suffered the penalty of their own indiscretions.

It is with a degree of trepidation that I approach what seems to me to be a logical deduction. The advocacy of anything savoring of compulsory military service is a challenge to American sentiment and tradition. Commercial enterprise is quick to brook interference with its progress, the more especially, when such interference is not productive of at least prospective financial benefit. The average American is intolerant of anything which restrains him in the full exercise of his own free will. Such a sentiment combined with lack of education and its accompanying disadvantages can only result in the spirit of lawlessness with which the public is already too familiar. The protection of life and property in the large cities has developed into a situation with which the police facilities seem unable to cope. The problem might better be solved by preventative than by punitive measures. If a term of compulsory military service of one, two or even three years would result in the physical and moral improvement of the individual; if it would inspire him with a more profound respect for and obedience to the law; then commercial interest might well afford the temporary inconvenience of such a separation in view of the advantages to be derived from the service of a

superior class of trained and disciplined members of society. If we are to believe that sturdy physiques and sound personal principles are valuable assets in the manhood of a nation, the conclusion seems to point persistently to something akin, at least, to the military training of youth.

The army is an expensive institution whose periods of active service are, happily, separated by longer periods of peace. Its maintenance during such periods of military inactivity is a question of political expediency which does not permit of argument. Its function during such periods cannot justly be characterized as one of passivity, for it is ever busied with careful, conscientious preparation wherein it can never hope to attain a permanent degree of perfection, but must content itself with the molding of raw material into more perfect manhood and distributing the results amid the ranks of society.

EMINENCE OF THE AMERICAN ARMY.

BY J. C. TUTT.

[J. C. Tutt, historian, born Warrenton, Va., March 31, 1851; graduated from Caldwell academy in St. Louis; has devoted his life to the study of history and the writing of articles on political and historical topics for magazines and newspapers, and has for several years written a weekly historical article for the St. Louis Globe-Democrat.]

In a recent debate on the army reorganization bill in the British house of lords, Sir Garnet Wolseley characterized the American army as the best in the world. That certainly is an extraordinary declaration. We haven't many soldiers and never made any great pretense at military training, yet here by the testimony of the first strategist in Europe, who knows all systems, our army is given the proud position of pre-eminence. To grasp the meaning of this assertion one must contemplate the vast military forces of the continental European nations. All that is requisite with them to precipitate war, aside from financial preliminaries, is the mobilization and the forward movement of troops. Equipment, discipline and a numerical strength approaching a war footing are kept up continuously. The government rests on the army. We saw how quickly two nations could appear in battle when Germany and France fought and how profoundly both governments were affected by the result.

When a young man Garnet Wolseley participated in the campaign of the Crimea and has been at the front in all the memorable military movements of his country. He is a soldier tried and true and is intellectually equal to great occasions. The reason his record is not more brilliant is that his country is insular and is not a land fighting power. But he has the keenest possible appreciation of soldierly qualities. He knows what they are and what kind distinguish men as superior. On this point his testimony is of the highest order. There is probably not another man living so well qualified to speak. His knowledge, his experience and his personal observation all combine to make him a star witness on the merit of

soldiers. And he says that, in his judgment, the American army is the best in the world. But Lord Wolseley is of opinion that the wages of the United States soldiers are a big factor in the total sum of qualities that determine his superiority. The liberal wages are a highly commendable feature of our military system, but it is doubtful if they contribute as much to the eminence, or excellence of the American army as Lord Wolseley thinks they do. It was gratifying to the volunteer soldiers to receive a big roll of money when paid off and discharged at the end of the month but that was not the object of his enlistment and service. He went to war on the reputation of his country. That was at stake, and he defended it.

This government pays its private soldiers $13 a month, and it paid those engaged in the Spanish American war 20 per cent additional. It gives a major general $7,500 a year and adds to this amount, up to a certain time, 10 per cent after each five years of service. Between the major general and the second lieutenant the pay ranges down to $1,400. That is not extravagant, but it is liberal and is enough. The officer, we see, has the best of it, though in the increase for the war he received only 10 per cent, half the share of a private. A premium is put on his skill and he is recompensed for his arduous course at West Point. So much money will stimulate the best faculties and command the finest energies, but go above a certain mark of economy and it loses its force. It then becomes an object. With the rank of the American army it certainly is not an object. And what Lord Wolseley says in this respect has some weight on the theory that a man should have enough. But, after all, it is a small way of dealing with a big matter. That the army of this republic is the best is no ordinary declaration. It is, indeed, a wonderful saying. For the fact confronts us that we are not equipped like the nations of Europe. What is it, then, that gives us such renown in a military way? It is a little difficult to attribute it to the pay of soldiers. That is all right in serving its purpose, but its purpose is not the achievement of military eminence. That is a great thing and is the expression of some great silent activites. It invites inquiry as to whether true principles prevail in the formation and regulation of armies.

Germany can put more men in the field in less time than any other nation, and all her reserves are strong. France is next in capacity for putting troops in action, and Russia ranks third. But neither Germany nor France has the reserve strength that Russia has, though the former beats her in the total war footing. Before the volunteers were discharged after the war with Spain the United States had only 100,000 men in service, which looks rather small alongside of two million or thereabout on the first call. Yet not one of the European powers here mentioned has a war total equal to that of this country estimated on the fighting strength developed in the rebellion. There is where we get an absolutely correct basis, counting the growth in population, for calculations as to what the United States can do in a military way. We do not know on just how broad a ground Lord Wolseley makes the assertion that the American army is the best in the world, but from any point of view he speaks advisedly. It is the best. Still the mystery of why it is so is not explained. There is a vast difference between a force of 100,000 and one of 2,000,000. And in that difference will likely be found the reason why the large army, numbering about half a million in peace and capable of being quadrupled almost momentarily, is inferior to the small one organized with some difficulty. It is twenty times its size, and Lord Wolseley says it is not nearly so good. In this matter, as in all things scientific, we have to deal with both theory and practice, and the question is whether or not European military establishments are constructed on a false principle and that of the United States on a right one.

As already pointed out, there are millions of men in Europe ready to spring to arms while in this country there are comparatively few, yet on a war footing the United States will lead any other nation. These most extraordinary facts, and not the wages paid soldiers, explain the eminence, or greatness, of the American army. And what is the lesson it gives to the world? That war is not a legitimate profession, and that putting the strength of a nation in perpetual training for it is a waste of energy. The problem involved embraces the entire realm of life, and presents the relative merits of action and repose. There is always more or less controversy as to the prepa-

ration requisite to great achievements, and it is a vital subject. A novice exhausts himself in getting ready, while a professional throws away no good strength on preliminaries. Preparation judiciously practiced has its advantages, but the objection to it principally is that it excites one to overexertion. Soldiering differs from all other occupation in that it reaches the culmination of its purpose but seldom. Army life is pretty much all education for either defensive or offensive tactics, and battles are rare exceptions. So much converges in them that, even if they were of regular occurrence, the periods of their postponement would naturally be long. But then armies in juxtaposition are a menace and through them peace is preserved.

The fact, however, remains that they are seldom called upon to put in practice their theories of training. Otherwise the British would have done better in Africa.

The business of an army is to prosecute campaigns and fight battles, and all its discipline is to these ends. It is plainly apparent, then, how the soldier's calling differs from others. It is an inactive one. This truth the American system recognizes, while that of Europe does not. And it is by the recognition of truths that people and nations win. It may be urged, of course, in support of the German system, which prevails largely in Europe, that one great army calls for another as an offset; but this does not in the least affect the respective theories that underlie the maintenance of large and small military forces. Germany, France, and Russia operate on one theory, and either of them can put in the field, on short notice, nearly two million men. The United States, operating on a different theory, in its last war employed only about one fifth of a European peace footing. And Lord Wolseley says that ours is the best army in the world. The career of the United States, it is commonly admitted, has been momentous in the way of enlightenment along the lines of civil government, but it has never been suspected that it would take the lead as a military power and demonstrate the value of a neglected principle. Not that our statesmen and army officers have discovered the law of power in repose, but they have been forced to accept it and act upon it by the press of circumstances. Naturally with us the standing army is small, and naturally

with the European nations it is large. No penetrative or discriminative genius perceived the superiority of either method. Many years of experience brought that out. And the American method is the best of all by the testimony of the first English soldier.

We do not lay claim to any particular brilliancy in the field of discovery though in that America stands in the foremost rank; but we are at least to be complimented for observing and acting upon the greatest fact that the vast military systems of the world have yet disclosed. True, our celebrated eugolist, Lord Wolseley, does not discuss method, and says wages are an incentive to achievement; but one of his discipline and comprehension can not well help knowing that methods, or scientific systems, are back of all effective expression of combined energies. If the difference that distinguishes the American from the European soldier, or rather that between the two armies, is sought for, it will be found in the methods that govern them. They determine primarily the rank of armies as they do of all other organized bodies of large dimensions. And when two military systems are brought into comparison it is the principle of the superior one that triumphs. What, then, is the principle underlying the great armed force of Europe? and what that underlying the very meager one of the United States? The one is to be always on the verge of action and ready to plunge forth into battle when called, and the other is to lie in repose and await emergencies. The latter has this immense advantage—that you do not have to forget and discard a mass of ideal and impractical rubbish. The lament of the British soldier in Africa is that he can not get away from his tactics, which actual warfare has shown to be mainly worthless; and his beastly tactics in the Revolution helped mightly to establish American independence.

After all that has been seen, and said, and done, it is pretty plainly evident that we have the right idea of military as well as civil affairs. Americans are not even accustomed to account themselves among the first of the powers in arms, and yet their pre-eminence is frankly finally admitted by unquestioned foreign authority. Admirable, however, as the methods of our army are on the whole, they do not reach the standard

of the navy in one thing, and that is in the development of tactics. Indeed, the nub of the whole military problem is to be found in the highly original plans of the American naval officers for arranging and carrying forward a battle. They are not ruled by written tactics. This very weighty fact was brought out by Edward M. Tutt in an interview with Admiral Brown, of Indianapolis. Mr. Tutt's article was on naval tactics, and in an endeavor to learn what books on this subject are used he elicited from the admiral the rather surprising information that there are, in particular, none. The tactics of the navy, said Admiral Brown, are developed by the progress of the fight. It is worth knowing that American naval officers largely map out their fights in action, and we did not know it until Admiral Brown said so. Thus, through the efforts of special newspaper writers many of the finest truths that, but for them, would forever lie buried are brought to light. They cover an extensive field and a most important one.

It is not in the least amiss to say that this naval theory of permitting battle plans to develop themselves by prevailing situations and circumstances is worthy the serious consideration of army officers, for it was employed by the greatest captain the world has known. Napoleon dispensed with discipline and made his dispositions on the field. He had been through the military schools, but he flew in the face of all the European tacticians. His army in camp did very little drill duty, and he fought it in a way to make Austria, Russia and Prussia revise their books. He let the light fall in detail on the innumerable weaknesses of the old system, and now, having escaped criticism for nearly a century, we disclose its absurdity as a whole.

The eminence of the United States army, we see, is not owing to an immense scheme of organization and persistent and rigid discipline, but results from an active principle that is just the reverse of this. And another thing that contributes very materially to the distinction of this republic as a military power is the reputation its soldiers feel in honor bound to maintain. In both foreign and domestic warfare it is unsurpassed, if not unparalleled for pertinacity, skill and valor. No soldiers ever returned from the field of battle with greater reputations than those of Washington, Taylor, Grant and Lee. From the

closing days of the Revolution the American army has felt the weight of an illustrious name. Washington immortalized it, and ever since it has striven to preserve its glory undimmed. No retrogression marks its broad pathway. It is inspired by its fame, and its inspiration is a power of infinite magnitude. On the reputation of the first two wars the Monroe doctrine was put forth, and on that of the Civil war the acquisition of foreign territory was accomplished without molestation or question. Back of the American soldier in the conflict with Spain lay a century of history marked by feats in arms more laudable, and therefore more splendid, than the achievements of Caesar or Napoleon, and the remembrance of these nerved him for victory. And, indeed, one of the strongest incentives to any army is its valor of former days. This is more potent than wages, and together with right methods explains the excellence of our soldiers.

WEST POINT.

BY CHARLES WILLIAM LARNED.

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War as an art has not escaped the regulating force of modern industrial specialization. Starting as an instinct and the natural business of the entire body of adult males, it has steadily shrunk in its scope until it has become, with the advance of civilization, a distinct profession and a special science. This is no less a fact even where, as in the continental system, an entire nation is under military tuition; for the tendency of modern conditions is to specialize the science of arms more and more, and to reduce its principles to exact terms exactly in proportion to the growth of industrial expansion and scientific discovery. Not only has the mechanical enginery of war become more complex, and the problem of supply and mobilization more intricate in detail and precise in execution; but the private soldier has to be taught more things, and is required to know them better than ever before. It is a painful thought, but it is a fact, that the only entirely consistent and approximately perfect organization in the social system is that of human destruction as exemplified in the military hierarchy of Germany. As a working mechanism of human agencies it has no equal.

So long as the forces which operate to bring political and industrial differences to the issue of arms continue to exist, it is entirely beside the mark to declaim against war and to decry the professional soldier; and there are few forms of cant more depressing than the pious horror of commercial cutthroats for the brutal instincts of the military class in view of the patent fact that commercial greed is the vital principle of modern military armament. Industrial war does not differ in aggressive principles from the war of arms, and often its immediate results are not less cruel and disastrous, while its purposes are certainly more sordid and merciless; and when, as in our day,

the two are associated as master and tool, such epithets, so long as chestnuts are hot, come with a bad grace from the monkey to the cat. War will cease to exist only with the conversion of the soul of the commercial and political man to the standard of the ethics of the millenium; and, in the meanwhile, the more professional it is made and the more thoroughly its science is mastered, the more will its horrors be mitigated and its duration lessened.

That war is a science of details which must be mastered in advance is the lesson that Prussia has twice taught the modern world; and Washington, at the beginning of our national career, saw this clearly even under the less complex conditions of that day. In his last annual message to congress he remarks, "A thorough examination of the subject will evince that the art of war is both comprehensive and complicated; that it demands much previous study; and that the possession of it in its most improved and perfect state, is always of great moment to the security of a nation."

From these considerations spring the raison d'etre of the military school; and it is well to bear in mind that whatever be the policy of this nation as to the size or character of its military establishment, the necessity for the school is paramount. Indeed, the necessity for the school grows greater in proportion as the size of the standing army diminishes; and an ideal condition, perhaps, for a republic would be a minimum armed force, and a maximum of thorough military instruction in high grade military schools; a large supply of accomplished officers distributed throughout the land ready at call to organize and lead the volunteer levies of the nation. At all times of military emergency the great embarassment has been and will continue to be the lack of trained officers for the handling of these levies. There never was and probably will never be a lack of men. There are, of course, a considerable number of civilians who feel abundantly competent to wear the straps and draw the pay of command from major to major general; and, equally of course, there always will be abundant lawmakers in times of emergency and excitement ready and willing to afford them the opportunity; and, for this debauch of pull, the country must always pay the price in early disaster and blunder; but this is a con-

dition inherent in our institutions, and the bitter lessons taught by each war's experience are speedily forgotten and whistled down by the wind. There seems to be, also, a widespread, latent resentment, on the part of the potential commander in civil life, of the implied doubt regarding his military capacity conveyed by the existence of a military academy and its severe exactions, which does not fail to manifest itself in bitter and gleeful vituperation of that institution upon opportunity. The West Pointer with his exasperating knowledge of his business, his austere views of meum and teum and the virtue of exact statement, has been a thorn in the side of many a fervid volunteer with a misfit eagle or star. The graduate lieutenant or captain, and his non-graduate brother regular who are thus ranked, besides the four fiery years of the former at the academy, mayhap have been humbly serving their trade in storm and stress for thirty years, waiting for the opportunity to show their worth. If, when the time comes, the first opportunity goes to the politician, the tradesman, or the youth with pull, the graduate patiently takes his place on his superior's staff, shows him how, and waits for time to justify him if he lives. How magnificent was the justification of the great war of the century, the record of its history shows. It is to be doubted if any educational institution was ever so superbly vindicated by trial as the national academy at West Point, or has more clearly demonstrated the fitness of its purposes and methods to accomplish proposed ends; and it stands to-day foremost among the military schools of the world, of acknowledged pre-eminence and with a record of integrity and high command unequalled by any.

It is natural to a strong and self-reliant republic, which has developed aloof from the glitter and clash of modern militarism, to set small store on military matters, and to underrate the discipline of military preparation. America has had too much to do on the farm and in the shop to spend much time soldiering. From 1812 to 1898 it had but one foreign war and that a little and one-sided one. 1861 brought a sharp and stern awakening to the meaning of war on a large scale, but when the great volunteer armies went back to the farms and shops, after the family quarrel was settled, no one had any

more taste for soldiering than before, and, as there was nothing to fear from outside, the military lessons of the war, whatever they were, were speedily ignored or forgotten. One of these lessons was West Point: that institution whose record in the struggle was pre-eminent; of whose sons on both sides, over three hundred and fifty, wore the stars of general rank, and held all of the chief commands; West Point, which had organized victory in the scientific and supply corps, and which at Appomattox held on the one side the sword of the victor and on the other the pen of honorable capitulation. Within a dozen years thereafter, the press of the land rung with fierce denunciations of this hot bed of aristocrats and ruffians, and the halls of congress echoed threats of its destruction. Another score of years witnessed a second vituperative cyclone upon its devoted head, a second volcanic shower of epithets in the press of the land and from individual sources, accompanied by almost universal oblivion of the part played by the academy in the nation's history and of the material it has contributed to the nation's life. And yet, notwithstanding these hysteric gusts, there exists, among the large body of those who know and reflect, a strong consciousness of the worth to these United States of America of the spirit of patriotism, duty, and integrity developed in the small body of its servants who are nursed to their professional maturity by the alma mater of the Hudson highlands.

On the 16th of March, 1902, the United States military academy at West Point completed the first century of its existence. The total number of graduates from the institution in that century was 4,135. The total appropriations for the support of the academy since its foundation aggregate $22,189,535.94 (about the cost for one year of the regular army before enlargement) or an average of $221,895.35 per year, and of $5,366.25 per graduate. During this period of 100 years its sons served in one civil, and four foreign wars, and an almost uninterrupted Indian conflict; and in civil life they held almost every office of honor and trust in the gift of their fellow-countrymen, from president of the United States and of the confederate states, presidents of universities, railroads, and banks to mayors and legislators, principals of schools and

heads of minor corporations. They have been bishops and judges, distinguished clergymen, artists and lawyers, successful physicians, noted scientists, and civil engineers. In foreign lands they have been ambassadors, ministers plenipotentiary, consuls general, and special envoys.

Of its military record I shall have occasion to speak presently. I desire for a moment to dwell upon some features of its relations and contribution to the civil and productive life of the nation. It will, perhaps, be of interest to show in the following table the versatility of resource and adaptability to varied conditions of its graduates.

TABLE SHOWING CIVIL OCCUPATIONS OF GRADUATES OF THE MILITARY ACADEMY IN ITS FIRST CENTURY.

CULLUM'S REGISTER.	
President of the United States	1
President of the Confederate States	1
Members of Cabinet of President of United States	4
Ministers from United States to Foreign Courts	11
Charges d'Affairs	2
Consuls General and Consuls	9
Members of the United States Senate and House	21
United States Civil Officers, Various	170
Presidential Electors	8
Governors of States and Territories	14
Lieutenant-Governors of States and Territories	2
Members of State Legislatures	77
Presiding Officers, State Legislatures	8
Members of Conventions to form State Constitutions	13
State Officers, Various	76
Adjutants, Inspectors, Quartermaster-Generals, Chief Engineers of States and Territories	24
Officers of State Militia	145
Mayors of Cities	15
City Officers	48
Merchants	121
Presidents of Universities, Colleges, etc	41
Principals of Academies and Schools	32
Regents and Chancellors of Educational Institutions	13
Professors and Teachers	131
Superintendent of Coast Survey	1
Surveyors-General	10
Chief Engineers of States	14
Presidents of Railroads and Corporations	77
Chief Engineers of Railroads and Public Works	61
Superintendents of Railroads and Public Works	59
Treasurers and Receivers of Railroads and Corporations	21
Civil Engineers	217
Judges	13
Lawyers	185
Bishop	1
Clergymen	20
Physicians	12
Artists	3
Farmers and Planters	228
Bankers	17
Bank Presidents	8
Bank Officers	21
Editors	26
Authors	158

It will be seen at a glance that no institution in the land, not excepting congress, is at once so representative of every condition and locality, so purely democratic. It will also be observed that no institution, however liberal, can show a more plastic conformity to varied conditions and requirements than is shown by this list of distinguished successes in every walk of civil life. It is a mathematical refutation of the assertion that a military education unfits for civil functions and occupations. Since the compilation of this list nearly every one of the higher offices excepting that of the chief executive has had added occupants from graduates; ambassadors, ministers, judges, members of national and state legislatures, chancellors of universities, etc., etc. The proved integrity and discipline of mind and habit engendered at West Point make their mark and bring their price wherever applied.

No better illustration of the value of these qualities in positions of trust and professional responsibility can be found than in the work of the engineer corps of the U. S. army. This corps is wholly composed of graduates of the military academy, and its control has been in their hands from the beginning. Indeed, by the law of their creation the engineer corps and the military academy were identical. "And be it further enacted, that the said corps (engineers), when so organized, shall be stationed at West Point, in the state of New York, and shall constitute a military academy." (Act of March 16, 1802.)

Since that date the work of this corps has been more and more of a civil nature, embracing the control of the great river and harbor improvements, boundary surveys, construction of great public buildings, including the national capitol, public library, Washington monument, and many more undertakings of a purely civil character. During this long period of a century, the public moneys disbursed in civil operations by this small body of officers has aggregated the enormous sum of $405,898,159.30, without loss to the government of a single dollar, and with but one accusation against an officer. To this record of civil work must also be added the very large disbursements for military purposes, increasing the aggregate very greatly—certainly to not less than $500,000,000.00.

Let us turn to the story of its work in the line of its essential function as a military academy, and inquire how it has justified the purposes of its foundation and the expenditures for its maintenance as a school of war. In this regard its tests have been equally varied and exacting. How has it met them? The war of 1812 with Great Britain found the academy feeble and struggling for existence against adverse influences. There were at that time but sixty four graduates, educated under primitive conditions and all of junior rank. Our few regulars had little or no experience under fire. Of the young graduates serving in the field one sixth were killed in action, one fourth were killed or wounded, and one fifth of the survivors received one or more distinguished brevets.

At the outbreak of the Mexican war there were over five hundred graduates in the service. The small regular army was mostly officered by them, and the volunteer regiment and battalions were generally under their command, although the highest commands were in the hands of their seniors, the veterans of pre-academic armies. The armies of Mexico won thirty victories against immense odds, took a thousand cannon and huge quantities of small arms and munitions, captured ten fortified places and a vast country. Of this General Scott, a non-graduate, the commanding general, said, "I give it as my fixed opinion that, but for our graduated cadets, the war between the United States and Mexico might, and probably would, have lasted some four or five years, with, in its first half, more defeats than victories falling to our share; whereas, in less than two campaigns, we conquered a great country and a peace, without the loss of a single battle or skirmish."

During this period, and up to recent times, the regular army, officered until 1861 almost wholly and since then largely by graduates, has fought a pioneer war against the fierce nomads of the land. In over three hundred fights they have won the progressive boundary of civilization and held it for their brothers of the plow, braving hardship and death in all seasons. Living the best years of their lives in remote frontier posts, with rare glimpses of the refinements of civilization; having little reward in sight but a sense of duty done; growing gray in junior grades under the slow promotion of peace

conditions; kept poor by the necessities of frequent changes of station, these exiles in their own land were the guardians of a territory, which they did not possess, and the promoters of a great industrial development, whose fruit was not theirs.

When the great war of the states burst upon the land it found the academy as now, recruited from the four quarters of the union, and its cadets representing the convictions and traditions of their homes. The political doctrines of the native state, its traditions and prejudices, were by nature those of the young man. Feeling and contention here ran high and fierce as everywhere else. Even the north was divided against itself. Notwithstanding this, it is a remarkable fact that of the officers of the army appointed from civil life one half went with the confederacy, while only one fifth of the West Pointers went south; and of those from the southern states themselves, one half remained loyal. One hundred and sixty two southern graduates withstood the terrible strain of kin and birth and stood by the flag, while from every other institution and position,—the supreme bench, the cabinet, congress, the agents of the state, and institutions of learning,—the southerners flocked en masse to their native states. So much for the question of fidelity at a time when all convictions were in good faith and fierce insanity at variance. Now for the military aspects of the results. A brief statement will sum up the evidence of the tables subjoined.

At the end of a titanic struggle between an aggregate of about three millions of combatants, all the armies in the field on both sides were commanded by graduates, nearly all the corps, a large majority of the divisions, the staff corps of organization, supply, and science of both forces and many of the brigades. Every important battle of the war was commanded on one or both sides by a graduate—generally both. Out of sixty, on the list given below containing all the most important battles and campaign series, all but five were commanded on both sides by graduates. This was the verdict of the end of the conflict after every expedient and personality had been put to the test:—

The total number of graduates of the academy to date

who have attained full rank of general officers in the service of the United States is 268.

The total number to attain this rank in the confederate service so far as can be ascertained is 147.

During the Civil war, the total number of graduates who attained full rank of general officers in the armies of the United States, is 208 distributed as follows:—

Army Commanders—25. Grant, Sherman, Sheridan, McClellan, Halleck, Meade, Thomas, Schofield, Rosecrans, Hooker, Buell, McPherson, Canby, Ord, Howard, Hancock, Slocum, Merritt, Lyon, and others.

Corps Commanders—39. Sedgwick, Franklin, Sykes, Warren, Couch, Gordon Granger, "Baldy" Smith, Stanley, McCook, Augur, Crook, Griffin, Wright, Gibbon, Doubleday, Parke, and others.

Division and Department Commanders—76. Smith, C. F., Buford, Gregg, McCall, Ricketts, Hamilton, Kilpatrick, Custer, Sherman, T. W., Averill, Getty, King, Ayers, Greene, G. S., Webb, Cooke, P. StG., Wilcox, Anderson, R., Ruger, Kautz, Ames, Upton, Mackenzie, and others.

Chiefs of Artillery and Brigade and District Commanders—59, including Barry and Hunt, the great artillery chiefs.

Heads of Staff Departments—9, including Meigs, quartermaster general; Lorenzo Thomas, adjutant general; Totten, chief of engineers; Ripley, chief of ordnance; Eaton, commissary general.

During the Civil war the graduates attaining full rank of general officer in the confederate service were distributed as follows:—

Generals—8. R. E. Lee, J. E. Johnston, A. S. Johnston, Beauregard, Bragg, Hood, E. Kirby Smith, and Cooper.

Lieutenant Generals—15. Jackson, Longstreet, A. P. Hill, D. H. Hill, Polk, Ewell, Early, R. H. Anderson, Pemberton, Buckner, Wheeler, S. D. Lee, Hardee, A. P. Stewart, and Holmes.

Major Generals—40. J. E. B. Stuart, Fitzhugh Lee, Trimble, Donelson, Hugher, Magruder, Crittenden, Withers, Elzey, Walker, E. E. Johnson, Stevenson, Gilmer, McCowan, B. R. Johnson, S. Jones, M. L. Smith, G. W. Smith, Lovell;

McLaws, Van Dorn, French, Gardner, Whiting, Maury, B. R. Jones, Wilcox, Maxey, Pickett, Heth, Field, Ransom, Forney, Bowen, G. W. C. Lee, Pegram, Pender, Lomax, Marmaduke and Ramseur.

Brigadier Generals—84. J. H. Winder, Rains, Garnett, and others.

The outbreak of the Spanish war found the senior positions in the regular army held by non-graduates, brave men and excellent soldiers, whose school had been the Civil war followed by more than thirty years of frontier service. The graduates of high rank had all passed out except one, General Merritt. All of the staff corps, except the scientific ones, were commanded by non-graduates, and their senior officers were of the same class. The principal commands fell, therefore, into their hands, and it was left to the graduates to distinguish themselves as line officers, regimental commanders, and staff officers which they have not failed to do. Captains and lieutenants have taken regimental commands, and one but recently a lieutenant of cavalry, J. Franklin Bell, won by heroism and ability the star of brigadier general in the regular army; while another graduate, Captain Eugene F. Ladd, ninth U. S. cavalry, received a testimonial from citizens of Cuba for his high fidelity to trust, as treasurer in the civil government, in the disbursing of public funds to the amount of $30,000,000.00. History will tell the work of the young graduates at Santiago, in the organization camps, in delicate and hazardous duties of scouting and reconnoissance. Although the Spanish war was but a brief episode with but a feeble resistance, it cost the lives of fourteen graduates, killed in action, besides deaths from disease. In the Philippines they have been present in over five hundred actions and skirmishes, and have lost up to the present time fourteen officers in action, beside others who have died of disease. In the two wars they have served in every grade from major general down to second lieutenant and are to be found on the staffs of every commander in the field. They still form the entire personnel of the two scientific corps—the engineers and the ordnance—with the exception of four officers of ordnance. Many of them, captains and lieu-

tenants, have been appointed to the command of volunteer regiments and still others of junior grade are serving as field officers in these regiments.

Having glanced at the product let us examine the factory.

The position occupied by West Point among educational institutions is as unique in some respects as its methods are characteristic. West Point is first of all a school of character, and it is in this regard that it stands pre-eminent. It must stand or fall principally by its achievement in this line of development. The wise purpose of its founders and the trend of its natural evolution have tended to make this feature of its work the dominant one, and results have shown the production of tone and morale to be the supreme end as well of a military as of all education.

The order of objective proposed in the training of the academy is: first, the development of character; second, clear thinking; third, practical and technical military instruction. It departs at once from ordinary educational lines in the nature of its motive force, self interest, and in the mode of its operation which is coercive. In this regard it follows natural lines. Providence has implanted in the human heart as the most powerful of persistent motives self interest, whether enlightened or debased; and in its dealings with the individual nature is pitilessly coercive. The candidate for the diploma of the academy has his profession as well as his education at stake, and in its dealings with him it has the autocratic power of military law—the legislative and executive authority of the nation behind it.

The only proper concern that the institution can have regarding the individual is that of exact and impartial justice. It offers him unusual opportunities and an honorable career. It exacts conformity with certain definite standards. It has no possible interest in his retention as a student other than this conformity, and its function as between him and the interests of the nation is a purely judicial one—to decide whether or not he has achieved these standards. If he fails, the connection is severed and there are thousands ready and eager to fill the vacant place.

Just here the position of the academy is often most mis-

understood both by the interested individuals and their friends and by the members of congress who possess the nominating power. By both, its functions as guardian of national interests and the conserver of judicial equity are generally lost sight of. The nominating power is apt to look upon a cadet appointment as not differing in essence from any other appointment in the political arena, in which political factors are paramount. Many congressmen have no acquaintance with the academy and very little, if any, knowledge of its history and methods. They nominate a candidate "because" and they wish his retention "because," and a veto by the academy upon this political prerogative is often resented, and this, notwithstanding that congress has passed a wise and necessary law, making the fiat of the academic board final as to the reappointment or retention of a cadet whose deficiency it has determined. On the other hand, the discharged cadet, his parents, and friends are bitterly disappointed and aggrieved. The young man, perhaps naturally, explains his deficiency by every reason but the real one, lack of ability or neglect of duty or study. An immediate rush is made for the congressman. The victim pleads, possibly, injustice or a dozen excuses, and begs reinstatement and the case is referred with urgent requests or demands from the member of congress, through the war department, back to the academic board. When the board stands firm, a hot resentment against the academy is often engendered, and by the semi-annual output of deficiencies there is thus formed throughout the country many centers of disaffection towards the institution. A political creation, deriving its students and financial life from political sources, it yet has to defend its integrity at the expense of its popularity and often of the friendship of the men who legislate upon its existence. But this struggle for the integrity of its methods is vital. Destroy the independence of the military academy within its proper jurisdiction and its power for good is withered. Should the taint of improper political methods—the power of pull and the domination of influence—ever corrupt its blood, the hour of its decadence has sounded. The American people have created, and now possess, one institution, at least, wherein the criteria of success lie in the individual—the fruit of his

honest toil unaffected by the sinister bias of expediency or exterior personal interests. If there comes a time when they fail to appreciate its worth to them principally and morally, the future will not fail to exact from them the full price of their mistake.

Character making at the academy is the product of two forces, tradition and discipline. The purpose of West Point is to make a soldier who shall be an honorable, courageous, self reliant, clear thinking man. The material upon which it works is the most heterogeneous imaginable; youth of good education, poor education, no education at all; from the plow, the office, the machine shop, luxury, destitution, competence, with brilliant, mediocre, and little ability; with high moral development, and with tendencies colored by demoralizing environment; with strict and with lax views of the obligations of truth—just as they are selected by their congressman. From these are to be weeded out the impossible; and of the rest, are to be molded men whose temper is up to the standard test, so far as any human standard can be a test. West Point does this and in a way that has made its brand upon its wares recognized and respected the world over. Now and then faulty material will slip through; no human agency can prevent occasional evasions of fixed standards; but the test is the general result.

The first point in its character making is honor. The views of rectitude and personal accountability, which have grown into the marrow of the institution, which are fostered by its authorities and have become its sacred code of honor, have a formative power impossible to be understood other than by experience. The corps itself is the chief custodian and executive of this tradition, and it is this fact that makes it potent. Any code of honor which has its root in coercion lacks vital force, and its imposition carries neither conviction nor reformation. The promiscuous youth gathered from the four corners of the republic who come to West Point with many shades of habit and conviction regarding the protean aspects of a lie, are met here at the outset by one principle, uncompromising and stern. All shiftiness and evasion, the whole body of casuistry must be policed once and for all, for

a man caught in a lie is damned. He has lost his caste, and the corps of cadets is not for him. When this point of view is attained by a body of men, a very healthy and high plane of action has been reached. Hatred of a lie is a splendid disinfectant.

The next point in the ethical scale is very naturally courage, which we who know our ethics understand it to be divided into physical and moral. West Point wants both. The corps is strenuous in its insistence upon the physical as a sine qua non. The logic of the matter is very simple: war is force and all its active situations demand physical bravery. A soldier is the agent of war, therefore he must be physically brave. Moral courage is admirable above physical bravery, but moral courage whose legs run the wrong way, although it may have a high and useful function, has it not on the battle field. The corps is, therefore, somewhat exacting in its criteria in this regard, and the corps is right.

The third point is subordination. The entire existence of the cadet is one of subordination. From the plebe to the superintendent he is surrounded by a heirarchy of graded responsibility and obligation. An order from a superior has the force of a cannon shot. To resist is not consistent with reason. And yet this subordination can coexist with certain obstinate traditions of violation of regulations and general orders very difficult to deal with. This is a paradox, but it is human and common in experience. The same cadet who would not dream of disobeying a direct order to imperil his life has long held it his prerogative to ignore the regulations and orders regarding hazing. This resulted from the fact that through many years of custom, hazing had grown with the traditions of the academy and become established as an inherited right, a prerogative, and a duty. The yearling just emerged from the plebe chrysalis, besides the stern joy of privilege, felt that his double duty to the academy and his successor demanded the exercise of the drastic methods of purgation and discipline which had molded himself and his predecessors whose names belong to history. Generations of plebes had taken their medicine and had gone their way to honor and glory. When the writer was a cadet at the close

of the war of the rebellion, veterans who counted their pitched battles by dozens, some of them wearing the shoulder straps of volunteer captains, received appointments to West Point and reported as plebes to the fierce satrap in gray and bell buttons; braced with painful vigor under the menace of his Spartan thumb; galloped astride of unresponsive chairs on imaginary cavalry charges; made up the beds and cleaned the arms of their seniors in submissive silence; and, in their turn the following year, became a part of the penetential mechanism designed to humble the spirit of the proud and bring the haughty into submission. There was no restriction upon hazing in those days. It was done openly before the officers, but like all exercise of irresponsible authority it gave opportunities to the coarser spirits to abuse their power and occasionally to carry it to brutality; and, in the course of time, some practices crept in unknown to the earlier forms. Twice has the academy been the storm center of a hysterical outburst throughout the country excited by hazing. The first concerned a colored cadet named Whittaker who was found bound in his room with a slight slit or abrasion in the lobe of his ear. A tornado of abuse in the public press was the result, stimulated by the approaching elections and negro vote. A senator from his seat in the national legislature called the graduates of West Point "spared relics of barbarism which ought not to be tolerated in a civilized country." Whittaker was proved before a selected court martial, composed of a majority of non-graduates, to have committed his own outrages, and the tempest subsided with the elections. During the Booz investigation, as in the other, a portion of the press of the country fomented the excitement by distorted, exaggerated, and false statements; and a nation worked itself into a frenzy because some heedless youngsters had pushed an old but prohibited custom to excess, although the events took place two years before and the most objectionable features of hazing had been voluntarily discontinued. But the Booz investigation has served a double purpose. It has broken up a bad custom, and it shows the country that its student officers tell the truth without reservation or regard to consequences and have the courage of their convictions.

The fourth point is hard work for every one—the unending, uncompromising exactions of duty from reveille to taps. For four years there is no relaxation but one furlough and the very rare and brief leaves of a day or two at holidays dependent upon demerit records. Nowhere except at the national schools is so much exacted of every individual from first to last. There is no option, every cadet must exactly perform every military and academic requirement or suffer the penalty; and the high value set upon the diploma of the academy is shown by the desperate tenacity with which its students struggle to remain. A resignation, except in face of deficiency, is almost unknown.

The academic course is based upon three fundamentals:—Every man in every subject: Every man proficient in everything: Every man every day. In other words, every cadet must take the whole course, there are no optional or excepted studies; every cadet must attain the minimum standard in everything, deficiency in one subject is deficiency in the course; every cadet must be prepared to recite each day upon all the subjects of study upon which he is engaged at that time. While all of these are adhered to in principle and in practice, there is a slight qualification in each sufficient to give some flexibility of application. In the first, although all go through the same course of study, the highest men in the class go a little further in some subjects. In the second, although proficiency in all subjects is demanded, a cadet standing well in other studies may, if deficient in one, be allowed to continue and make up deficiency by the next examination or be turned back to join the next class if in the judgment of the academic board the conditions warrant this leniency. In the third, although every cadet is likely to be called upon to recite at every attendance, occasionally he is passed owing to lack of time. But the escape is so rare that it can never be counted upon, and the necessity for unremitting preparation is as great as though there were no exception. These recitations are not merely occasional or scattered questions, but a demonstration of principle at the board or the solution of problems, and are also frequently converted into written examinations, either of principles or problems. There are, in addition, the regular semi-annual

examinations for the determination of proficiency, which are now wholly written for the first two years and largely so for the remaining ones.

At these examinations the burden of proof is upon the cadet. The standard of proficiency is sixty six per cent. Should his mark for the term in any subject fall below that percentage of the maximum in that branch, he is ipse facto, deficient, and must justify himself at examination or be discharged. Any form of deception at recitations, besides being practically impossible, is frowned upon by the ethics of the corps. The student stands absolutely upon his merits. Each subject of study has a certain count. The standing of a cadet in each subject is determined by the total of his marks therein, while his count in the subject is obtained by giving the head man its maximum count and each other man a proportional count resulting from his marks. His general standing is determined by the aggregate of his counts in all subjects of study and discipline.

In order that the principle of every man every day may be carried out, the classes are divided into small sections of from ten to fourteen men, having one instructor. The student rises or falls in his class according to his weekly marks by transfer from one section to another. These marks are posted every week and each man has accurate knowledge of his status at all times. Study is in quarters during specified hours, and is varied with gymnastic and military duties.

The corner stone of the course is mathematics, and the bulk of the structure is made up of the exact sciences. The exceptions are the languages—English, French, Spanish,—constitutional, international, and military law, and general history. The primary nature of the preliminary entrance examination has long been a severe handicap to the curriculum, but a recent congress has modified the law regulating it, a law which was enacted at a period when the educational standard of the public school system was primitive and imperfect. Room is needed for some advanced professional studies which are crowded out by the absolute necessity of instruction in elementary subjects which should have been completed in the high schools. The course of study as it now stands, is so ex-

acting and extended that it demands under these conditions the utmost energies both of student and instructors. The heads of departments must not only lecture and supervise, but roll up their sleeves and wrestle in the educational arena with the crude and undeveloped intelligences herded into the academic fold from four corners of the union. The strain is very severe and unrelenting, and the writer has seen, during his service of twenty five years, five of his associates break down under it,—all in the prime of their faculties; two forced into premature retirement with shattered health, and three dying in harness after heroic struggles against disease and heart rending affliction. The story of their devoted lives is but little known beyond the scene of their activities; and the members of their scattered households, forced to leave their homes in the majority of cases in straitened circumstances, have only the heritage of honor bequeathed by lives of unpretentious devotion to a high ideal of duty.

It is not competent to so general a paper as this to treat of the details of the military course of instruction. Its purpose is to familiarize the cadet with the duties and needs of a private in the ranks by practical experience; to impress indelibly upon his character the habit of discipline; and to train him to the function of command by its repeated exercise.

Four years of constant drill, practical instruction in military operations, and respectful submission to the will of his superiors makes him a soldier in the true meaning of the word. He may or may not have the talents of a great general, but he has at least the instincts of a soldier and a knowledge of the duties and technical requirements of his profession. He has above all an understanding of the term duty, which makes it the motive power of his professional life and simplifies for him all complex questions of practical ethics. The motto of his alma mater is the philosophy of his life. To do his duty, keep bright his honor, and serve faithfully his country is the hereditary ideal of every son of West Point.

THE SEA AND SEA POWER AS A FACTOR IN THE HISTORY OF THE UNITED STATES.

BY HILARY A. HERBERT.

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In the early part of the seventeenth century the inspired code of Christian ethics was profoundly impressing the human mind throughout all western and southern Europe, the literature of liberty handed down through the dark ages from Greece and Rome was also an active force, and these two forces had nowhere else so successfully coöperated to form free, just and stable government as in the British Isles. It was there that Hampden and Sidney had already lived and died, and it was there that the people had even then made good their claims to the protection of the magna charta, of the petition of right, and the bill of rights. True religious liberty was, however, as yet unknown even in England, and to secure for themselves and their posterity this right and the blessings of self government, the love of which had been instilled into them by English institutions, the early settlers of the American colonies braved, in the little ships of that day, the dark waters of the wide Atlantic. Some of the immigrants came from Holland and other countries by the sea, but it was the English language, English laws, and English ideas that were to dominate in all the thirteen historic colonies.

Fortunately the new comers found here a virgin soil in which to sow the seeds of liberty. No monarchial establishments stood in the way, no ideas of caste and privilege were to be eradicated. The wide Atlantic had kept the soil intact until man was ready to plant in it free institutions.

The settlers of the colonies set themselves down close to the sea and to the rivers that ran into the sea. It was the sea and the rivers that ran into it that were to furnish them means of transportation and intercommunication, and it was the

three thousand miles of ocean, separating them from the home government to which they owed allegiance, that rendered it impracticable for that government to dominate them completely. It was the wide expanse of sea, therefore, to which the American colonists were largely indebted for the measure of self government they enjoyed even when not yet ready to assert their complete independence.

When the war of the Revolution began, the geographical position of the colonies, all lying along or near the shores of the Atlantic, was in a military point of view especially disadvantageous. Their coast stretched over 1883 statute miles, and all along this entire line their indisputable possession of the sea enabled the British to select bases from which to sever communication between the widely separated armies of the colonists.

The colonists did not surrender the seas without a struggle; they were naturally a seafaring people and made many gallant fights upon the ocean. In October, 1776, the colonial government had, building and built, twenty six war vessels, though many of these never got to sea. Several of the colonies had built vessels of their own, and such was the activity of the American cruisers that they were said to have captured altogether in 1776 as many as three hundred and twenty sail. Many supplies and munitions of war that were to be useful in the long struggle to follow fell into their hands. In 1778 the American cruisers captured and destroyed four hundred and sixty seven sail of merchantmen, and throughout the war such was the courage and enterprise of the American sailors that British shipping was always more or less in danger. In 1779 Paul Jones made his celebrated cruise in the Bon Homme Richard and captured the Serapis in one of the most remarkable battles in the history of naval warfare.

But the little fleets of the Americans were eventually swept from the seas. Their successes whenever achieved served to inspire hope in the patriot armies, but the enemy was never seriously crippled by anything the colonists could do at sea—he was only exasperated. Arnold's gallant struggle for the control of Lake Champlain promised results that were really strategically important, but his efforts only ended in defeat,

and Lake Champlain and Lake George were left in the hands of the British. The Americans soon had of their own resources nothing to rely on but their land forces. Communication between these was over such extended lines, and marches of armies and transportation of supplies over the bad roads, which though inferior, connected the colonies together, were so difficult, that the cause of independence was plainly hopeless without the aid of some naval force.

The British at different times established on the Penobscot, Newport, at Gardner's bay, in the Chesapeake, at Charleston and Savannah, bases from which they could carry on offensive operations, and quite often it happened that they were able by aid of their ships to relieve their troops from distress. In the very outset of the war, the British army at Boston, besieged on Dorchester Heights, must have surrendered but for the fleet which came to its assistance and carried it away to Halifax. That same year a fleet seized New York and the British held it during the whole war as a permanent base, thus interposing between the American forces operating in New England and those in the south and west.

It was fortunate for the cause of independence that steam was not being used in those days as a propelling power of vessels. Clinton with a fleet of swift and sure steam warships and transports might have sent an expedition promptly to the relief of Burgoyne, who had cut loose from his base on Lake Champlain, and that general need not have surrendered at Saratoga. So also if the British fleets had been propelled by steam they could have promptly forced their way up the Delaware, and Philadelphia must have fallen long before it did. As it was, the capital city of the new government when it did fall was captured by an expedition escorted by naval vessels up the Chesapeake and landed at Elkton, on the Elk river near by. The city thus captured by the sea power of Great Britain was relieved by the sea power of France; it was evacuated, and the British troops were transported down the Delaware to New York for fear the mouth of the river should be blockaded by the French.

Nowhere during the long continuous struggle was the effect of the failure or success of British naval operations more appar-

ent than in the south. The attack on Charleston in June, 1776, failed, and as a consequence of that failure South Carolina remained in the hands of the Americans for three years. Afterwards, in 1780, when Charleston fell before a combined attack, South Carolina was overrun by the British. Savannah was captured in 1788 and Georgia was overrun. The force that under General Greene regained South Carolina and Georgia had made long and tedious marches from Virginia.

Situated as the colonies were, it soon became apparent to Washington, their great leader, that the sea power of the enemy gave him an advantage that rendered wellnigh hopeless the cause of independence unless the Americans could call sea power to their aid. Fortunately, at last, aid was to come from France. Washington communicated with De Grasse, the commander in chief of the French fleet, and made with him the combinations that were to result in the surrender of Cornwallis and his army at Yorktown. He subsequently put the case thus, in view of the next campaign:

"With your excellency I need not insist upon the indispensable necessity of a maritime force capable of giving you an absolute ascendancy in these seas. . . . You will have observed that, whenever efforts are made by the land armies, the navy must have the casting vote in the present contest."

When the French and American forces beleaguered Cornwallis by land, and De Grasse with the French fleet held fast the lines of escape by water, the British commander surrendered his army, and independence was won.

In the war of 1812 similar conditions existed. The United States had grown from three millions to over six millions of inhabitants. It had a small navy whose gallant deeds in that war shed imperishable luster upon its officers and men. There is no portion of our history over which the patriotic American lingers with more pride than over the terrible combats our ships fought with the English, whenever the chances of battle were at all equal. But these duels at sea and the very considerable damage inflicted upon the English commerce decided nothing. In spite of its gallant struggles our little navy of that day was practically swept from the seas by the British almost as effectually as in the Revolutionary war. The enemy chose

his points of attack along a line of seacoast that extended from the northern point of Maine to the western boundary of Louisiana. The means of communication, of transporting troops and supplies from one portion of the country to another were almost as primitive as in the war of the Revolution. The British landed expeditions on the borders of the lakes from Canada, in New Orleans from the gulf of Mexico, and through the Chesapeake bay, striking at the center of our long line of seacoast. They succeeded in capturing Washington and destroying the capitol of the United States.

A naval expedition, during the war of 1812, out on the high seas, or on one of the great lakes upon our northern border, headed for no one knew what point on our shores, with no spies to report its purposes, was naturally an object of undefined terror. The unexpectedness with which expeditions thus appeared from Canada was doubtless one of the causes contributing to the demoralization which American historians confess with so much reluctance to have existed, during the larger part of the war, among the American troops, especially along our northern border. No government by any plea whatever can justify a state of unpreparedness for war. As our country was situated in 1814, after our little navy had been driven from the seas, whether or not it had successfully resisted an expedition sent by water against any part of its soil, depended as a rule, on luck rather than on the courage of its people, or the strategy or generalship of its enemy. The British captured Washington because the Americans were not in luck; they struck at a point which, it had been supposed, would not be assailed, and which they were not prepared to defend. In the battle of New Orleans we were in luck; we were able to assemble troops there, and we had a general to lead them.

The victories won by Macdonough on Lake Champlain, by Perry on Lake Erie, and by Andrew Jackson at New Orleans, raised our prestige and, together with the gallant deeds of our little navy on the high seas, brought us out of that war with credit. But here again was illustrated, as in the Revolutionary war, the vulnerability of our long lines of coast and the absolute necessity to the United States of a navy.

When the great Civil war of 1861 came on, conditions had

been changed. The population of the United States had grown to thirty millions. It had extended westward to and even beyond the Rocky mountains. A distinctive feature of the situation then was that, for intercommunication, water transportation was being supplemented, and to some extent supplanted by railroads. There was, indeed, a network of railroads covering the whole country,—the south as well as the north,—but notwithstanding this, transportation by water was nevertheless a factor in the great struggle about to ensue, that was quite a potential, and in some respects even more decisive than in the war of the Revolution and of 1812.

The confederacy, strategically considered, was largely a compact body of states. Its railroad communications, though not equal to those of the north, were nevertheless sufficient. When the armies of the union sought to invade its territory from different points, the confederacy had the advantage of interior lines. By these lines it might have concentrated its armies, now upon one and then upon another point, in such a manner possibly as to have given it ascendancy; but all the advantages which would otherwise have been derived from interior and shorter lines were completely neutralized by the naval power of the United States.

The confederacy had entered upon this conflict for independence without a navy, and it manfully struggled to create one. It constructed here and there good ships and fought them gallantly, but they were unequal to the forces they were to meet. The career of destruction upon which the Merrimac had successfully entered at Hampton Roads was arrested by the Monitor. It was not long after this combat that the confederates felt compelled to destroy their famous vessel to prevent it from falling into the hands of the United States.

The Albemarle, the Mississippi, the Arkansas, the Tennessee, and other ships, constructed with so much pains and industry by the confederates out of their slender resources, fell one after the other into the hands of the enemy or were destroyed. Speaking largely, the confederacy, therefore, had no navy. The exploits of the Alabama and the Shenandoah, when noised abroad through the confederate army, were well calculated to improve its morale, and certainly did inspire its soldiers with

the belief that the destruction being wrought in the enemy's commerce would aid in bringing the United States to terms. But it can scarcely be alleged that these ships were of any real value to the confederacy. The destruction in commerce, amounting in value to about $15,000,000, did not seriously cripple the immense resources of the United States. It assuredly did not dispirit the armies of the union or incline its voters to make peace. On the contrary, the moral effects of these raids upon commerce, although they were sanctioned by the cruise of Paul Jones in the North sea during the Revolutionary war, and of the Essex and other ships during the war of 1812, was only to exasperate the people of the United States and to incite them to still more patriotic efforts, if possible, to put down the confederacy, which, as the people were then taught by their newspapers to believe, was resorting upon the high seas to piratical and uncivilized methods of war.

The military situation of the confederacy was this: Five millions two hundred thousand of white people had engaged in a desperate effort to establish and maintain their independence; they had four millions and a half of slaves to produce food and cotton; they had iron and coal in abundance, but were without furnaces or foundries or workshops; they were poorly supplied with arms; they were at the time producing cotton that clothed the world, but they had few cotton manufacturies and practically no other factories whatever; they had imported everything they used, except what was produced from their soil. With cotton they might have bought ships, arms and munitions of war, and might have obtained abroad the financial credit of their government. But the United States navy was everywhere at their doors; every part of the long line of seacoast which hemmed them in was successfully blockaded; instead of the abundant supplies of things, essential to their home life and the life and success of their armies, which would have come to them had they been able to assert their dominion over the sea, only scant articles of necessity were brought now and then through the blockade. The advantage of the interior lines of communication which the confederates would otherwise have enjoyed was neutralized by the necessity of keeping garrisons in Wilmington, Charleston, Savannah,

Brunswick, Pensacola, Mobile, New Orleans, Galveston and other ports. It was impossible to say when an army might be landed at any one of these points. Who shall estimate the value to the United States of the service of its navy which thus isolated the confederacy, cut it off from communication with the outside world, and at the same time compelled it to guard every point against a raid like that which destroyed the capitol of the United States in 1814?

Had the confederacy, instead of the United States, been able to exercise dominion over the sea; had it been able to have kept open its means of communication with the countries of the old world, to send its cotton abroad and bring back supplies of which it stood so much in need; had it been able to blockade Portland, Boston, Newport, New York, the mouth of the Delaware and the entrance of Chesapeake bay; had it possessed the sea power to prevent the United States from despatching by water into Virginia its armies and their supplies, as the United States was blockading and intercepting its supplies, it is not too much to say that a reversion of conditions would have reversed the outcome of the Civil war.

But this brief generalization of the results of naval operations on the Chesapeake and on the high seas, as they affected the military operations gives no adequate idea of all that was really wrought by the navy of the United States during that memorable conflict. When the Civil war came on, the influence of sea power had become vastly extended by reason of the changes which had been wrought by the substitution of steam for sail in the propelling of vessels. Every river that permeated the confederacy was to bear upon its bosom a hostile fleet. Fortress Monroe speedily became a base of supplies, and the gunboats above it on the James river were a continual menace to the capital of the confederacy. When McClellan's army, routed on the battlefield of Chickahominy, eventually made a successful stand upon Malvern Hill against the victorious troops of General Lee, the gunboats on the James powerfully aided in repelling the desperate assaults upon that position, by hurling huge shells from 15-inch guns into the charging columns of the confederates; and finally the war was practically closed by the army under Grant operating along the line of

the James. This line had been opened and kept open by the navy, and it ran from Fortress Monroe as its base, which base had been successfully maintained for four years by the navy of the United States.

Port Royal, captured and securely held by the navy, became a base of operations which continually threatened Charleston and Savannah. These two cities were thus both beleaguered at the same time by the naval forces at Port Royal, and the confederacy dared not for a moment send away from them troops that otherwise might have filled up the ranks so terribly depleted upon the battlefields of Virginia, Maryland and Pennsylvania.

Pensacola when it was captured became another base of operations necessitating continual vigilance and watchfulness by the confederate troops to prevent incursions into Alabama and Florida. Farther west and permeating the very heart of the confederacy were the Ohio river, the Tennessee, the Cumberland, and the Mississippi like a great inland sea dividing the confederacy in twain; and flowing into the Mississippi were the Yazoo, the Big Black, the Arkansas, the White and Red rivers. All these were scenes of naval operations.

One of the first victories achieved in the west was at Fort Henry, where the confederates, after a brilliant attack by the gunboats, were compelled to surrender to the officer in command of them. The demoralizing effect of this engagement upon the confederacy was quickly followed up by the battle of Fort Donaldson, in which the gunboats coöperated, and by a raid of gunboats far up the Tennessee river and into the heart of northern Alabama, near Florence.

On both the Tennessee and Cumberland and throughout all the territory in Tennessee and northern Alabama traversed by these rivers, Yankee gunboats soon became common, and they were a continuing menace and annoyance to the confederates, who in the outset had little counted on this factor in the conflict upon which they had entered.

Numerous engagements occurred between shore batteries and gunboats, and the moral effect produced by these vessels is vividly remembered by every intelligent confederate who followed carefully the progress of events. Sometimes the victo-

ries in these combats between the batteries on shore and the tin-clads, as they were called because their armor was thin, were with the batteries, and ex-confederates remember to this day the great joy that spread throughout the confederacy when it was reported, as it sometimes was, that gunboats had been overcome by horse artillery. It would be difficult to overestimate the value to the union of the services rendered by the frequent and so often unlooked for incursions of vessels of war into the heart of the confederacy.

John H. Morgan, the celebrated raider, was really captured by the gunboats on the Ohio when returning from a raid which had otherwise, at least in part, been successful. He was taken prisoner with the remnant of his command because the gunboats following along the river prevented him from recrossing the Ohio.

The value of the Mississippi was early apparent, and the government at Washington sent expeditions along it contemporaneously from the north and south. Farragut, after having passed and captured in a desperate fight Forts Jackson and St. Phillip, took possession of New Orleans, the principal city of the confederacy. Nothing accomplished by the armies of the union up to this time was equal strategetically to the capture of this great city, which was never retaken.

Porter and Davis came down the Ohio from Cairo, and after a desperate combat succeeded in passing the batteries at Vicksburg, thus temporarily effecting a junction with Farragut's fleet from below. But the Mississippi did not yet pass permanently into the hands of the union forces. Island No. 10, above Memphis, by the combined efforts of the naval and military forces, had previously been captured with its garrison. After the passage of Vicksburg by the upper Mississippi fleet, the confederates made a desperate effort to keep the river closed from Vicksburg to Grand Gulf, between which points was the mouth of the Red river. Farragut had found it necessary to fall back and join his fleet below Grand Gulf, which could not be passed without serious loss; and Porter, while Vicksburg and its batteries remained in possession of the enemy, found it impracticable to maintain permanently the stretch below. The Mississippi between Vicksburg and Grand Gulf

therefore remained for months in the hands of the confederates, who improved, as far as their resources permitted, their armaments at these two points and also at Port Hudson which lay between them. Some of the most desperate fighting of the Civil war occurred at these points, between the union gunboats and the batteries on shore, the confederates retaining their positions with great tenacity. From the country tributary to the Red river they were drawing valuable supplies for their army farther east.

As a part of these operations in the western rivers, gunboats ran up the White river as far as Duvall's Bluff, where they destroyed the bridge of a railroad leading from Little Rock eastward. They also made excursions up the Yazoo river and the Big Sunflower, destroying gunboats the confederates were building, as well as vast quantities of supplies that were being accumulated in that rich, alluvial country. These excursions of the gunboats into the interior were of course not always successful; many brilliant and gallant feats were done in the encounters which ensued, both by the federal and confederate forces.

In the summer of 1863 Grand Gulf and Port Hudson fell, and finally on the 4th of July, Vicksburg with its garrison surrendered, thus opening permanently to the forces of the union the Mississippi river. The capture of all these places was effected in large part by the armies of the United States, but in each and all of the operations leading up to these results the coöperation of the naval forces was effective and absolutely essential.

When the Mississippi had finally throughout its whole length passed permanently into the possession of the union, it soon began to be apparent that the confederacy, hemmed in on all sides, cut in two and threatened in so many directions by the naval and land forces of the United States, could not long survive the unequal contest it was waging.

The part performed by the navy, during the Civil war, has been commented upon by military writers abroad. "To overcome the dangers springing from so formidable an insurrection," wrote Prince de Joinville, "three results must be obtained: the shores of the seceding states must be effectively blockaded;

the course of the Mississippi and the whole water system of the west must be mastered; finally, the rebellious government must be driven from Richmond, its chosen capital."

Starting from these broad lines, the late Charles Cornwallis Chesney, colonel in the British army, and lieutenant in the Royal Engineers, one of the most able military writers of his day, observes that "the important part borne by the American navy in the contest; its absolute performance of the first portion of the task indicated by the prince; the powerful share taken by it in the river campaigns, which cut the seceded states in twain, the vast weight due to its exertions in the final successes of the federal generals, had been but little noticed as compared to the din and shock of the great battles with which the new world rang. Yet nothing is more surprising in this contest; no military, political or financial successes more completely defied expectation, prophesy and precedent than the work wrought by this arm of the union forces; and wrought by it in the very process of creation out of actual nonentity."

To this we may add the views of General Viscount Wolsley. That distinguished authority has expressed the opinion that, for Englishmen the naval operations of the Civil war have quite a peculiar importance. "The coöperation of the United States navy with their army" he says, "in producing a decisive effect upon the whole character of the military operations, is akin to what happens to us in nearly every war in which we engage. An English general has almost always to make his calculations strictly in accordance with what the navy can do for him. The operations by which the federal navy, in conjunction with the army, split the confederacy in two, and severed the east from the west, must always, therefore, have for him a profound interest and importance. The great strategetical results obtained by this concentration of military and naval power, which were as remarkable as the circumstances under which the successes were gained, deserve our closest study."

It may be of interest here to note the much larger degree of success achieved by the union forces prior to the summer of 1863 in the southwest than in the east. The armies of the Tennessee and of the Cumberland had, as their names imply,

rivers along which to operate and gunboats to help them on these lines, and by the spring of 1863 these armies had won many victories and made substantial advances. The army of the Potomac, although large and well equipped, and though its soldiers fought gallantly, had accomplished little. This army had been operating mainly along lines where the naval forces of the union could not help it, there were no rivers along which gunboats could ply. It was, as has been heretofore said, only when it changed its base of supplies to Old Point Comfort and operated along the line of the James river, opened and held for it by the navy, that this great army succeeded in winning and keeping the territory for which it was fighting.

Of course it is not possible within the limits of a brief article to properly apportion between the army and navy credit for the final outcome of our Civil war. So complex were the operations of these two arms of the service and so intimately interdependent were they that the solution of the problem suggested would require at the hands of a great strategist a thorough analysis of the whole history of that wonderful struggle. I have attempted no such task; only a brief review to recall facts which, if not forgotten, have apparently been underestimated by the general public.

The operations of the Civil war were carried on upon an extensive scale. There were enlisted in the armies of the union altogether, 2,672,341 men; the navy never at one time contained more than 52,000. The armies represented every hamlet in the United States; there were very few of the older families that did not have some blood relative in their ranks. Soldiers returning to their firesides naturally familiarized their friends and neighbors with the exploits of the armies in which they had served; and these soldiers have in large part written the history of the war. Regimental, brigade, division and corps histories have been written and published almost without number. Soldiers and their intimate friends numbered by the millions have been the readers of these books, while those who were personally concerned in the operations of the navy were relatively few, and most of them were common sailors, drawn largely from the merchant marine. These men have not writ-

ten and they have not read to any great extent histories; but they were men who with the officers of their corps, helped to make history during the trying times of the Civil war, and their deeds have never been exploited before the public as they deserve to be. The historian who shall take up the subject, with the time and ability to do justice to it, will render an invaluable service to his country. He will not only rescue from the partial forgetfulness into which it has fallen, one of the most brilliant chapters of that memorable war, but he will also set clearly before the public mind the influence of sea power as a factor in the past history of this country. This he will never be able to do without demonstrating at the same time, that we cannot afford to be without a navy in the future.

The situation as it was during the Civil war, may be, to some extent, repeated in the future in a war with a foreign naval power. The seacoast over which the confederacy was annoyed and attacked is still the seacoast of the United States, and added to this is the coast from Maine to Cape Henry, and from Puget Sound to the gulf of California. All this is assailable in the future, and all this is to be defended by the United States. It is not at all likely that any foreign power could, with success, invade the interior of our country, but we are still vulnerable from the sea. Our ports can be blockaded, our commerce can be destroyed, we can be isolated from the world, our flag can be humiliated and insulted, unless we understand and appreciate the value of sea power. We must stand always ready and able to defend and maintain the integrity of our country, its honor and dignity at home and abroad.

Ships and guns, torpedoes and men, are all of little use unless officers know how to fight them. Individual ships, however bravely and skillfully they may be handled and fought, can accomplish but little if the officers do not know when, where and how to dispose them; while at the same time skill in handling, courage in fighting, and knowledge of the proper disposition of ships in battle, will often be of little avail without continual and prompt supplies of everything needed in the exigencies of war, all of which must be reckoned for beforehand. Successful war means all of these things and more besides. It means, if the exigency requires, the exertion by a nation of its utmost

power, the utilization of all its resources, the tapping of every source of supply, the employment of every manufactory, every ship and every man that can be useful, and all this with the utmost promptitude and despatch. Further than this, plans of attack and defense must be devised, and these cannot be successfully made without the most accurate knowledge of harbors, inlets, safe and unsafe passages, tides and everything else pertaining to the possible theaters of impending war.

THE AMERICAN NAVY OF THE REVOLUTION.

BY CHARLES O. PAULLIN.

[Charles O. Paullin, naval expert, has devoted special attention to the study of the development of naval warfare during the period of history of which the American Revolution was a part, and has delivered addresses on the subject before the Naval Institute at Annapolis, one of which forms the following article which is published with the approval of the Institute.]

American students are more or less familiar with the principal achievements of the continental navy of the American Revolution. Numerous writers have popularized the naval successes of that celebrated sea officer, John Paul Jones. Esek Hopkins, the first and only commander in chief of the American navy, "Commodore" Samuel Tucker, and Captains John Barry, Joshua Barney and Silas Talbot have found their biographers, who have done ample justice to their gallant and praiseworthy conduct. In 1813 Thomas Clark wrote the first narrative history of the continental navy. Clark was not critical of his sources of information, and his statements must be taken with some caution. In 1839 James Fenimore Cooper, the well known novelist, published a readable and entertaining account of the Revolutionary navy, which, upon the whole, has not been improved upon by other writers. This is not to say, however, that Cooper's history is altogether reliable or judicial in its treatment. It is marked by the bias of the period in which it was written. After the manner of our early historians Cooper wrote with a quill plucked from the wing of the American eagle. To the enthusiastic writers who breathed the fresh and invigorating air of the new republic, it seemed unpatriotic, almost traitorous, to write down the seamy side of Revolutionary history. Consequently they touch lightly, or even omit entirely, events disparaging to the Americans. Lieutenant George F. Emmons published in 1853 a list of the vessels and prizes of the continental navy. This is valuable, although not complete. Later histories of the continental navy treat the subject popularly. The most recent narratives are those of Spears and Maclay.

These various authors furnish us with considerable detail

concerning the movements, engagements and tactics of the Revolutionary vessels. Additional material of similar character, chiefly in manuscript, is now accessible in our leading libraries. Drawing on these sources of information let us proceed to classify the different movements and engagements of the vessels of the continental navy, with reference to the objects which the men who controlled the vessels had in mind. Thus, we will obtain a more general view of the operations of the navy than previous writers had taken. Inasmuch as the information so gained bears upon the subject of naval strategy, it may be of some practical value, notwithstanding the great revolution in naval warfare that has occurred in the last fifty years. Captain Mahan has pointed out, that, while naval tactics vary with the improvements in the motive power and armament of the fleets, the basic principles of naval strategy do not. They are as enduring as the order of nature.

The operations of the vessels of the continental navy will be divided into primary and secondary operations. A primary operation will be described as one directed against the enemy's naval vessels at sea. Any other operation whatever will be called a secondary operation. Primary operations will be divided into major and minor. In major operations fleets of considerable size and force will be matched against each other, as was the case at the battles of Santiago, Trafalgar, and Martinique. Minor primary operations are engagements between some two or three of the smaller vessels of the combatants. A good example of this is the fight between the Bon Homme Richard and the Serapis. Secondary operations are of various forms, chief of which is commerce destroying.

It scarcely needs to be said that the continental naval department did not engage its vessels in primary naval operations. The royal navy was vastly superior to the continental navy in the number and size of vessels, in the number of guns to a ship, and in the weight of metal. Indeed the very existence of the continental vessels depended upon their ability to keep outside of the range of the larger guns of the royal navy. The continental naval department sometimes gave specific orders to its captains to avoid encountering the British

"two deckers" or engaging their ships of war unless one could be found alone.

In the minor primary operations of the Revolution some thirty to thirty five engagements may be counted. The honors here are upon the whole evenly divided. The Americans captured ten or twelve naval vessels of the enemy. With the exceptions of the frigate Fox, 26 guns, captured by John Manly between New England and Newfoundland; and the sloop Drake, 20 guns, and the ship Serapis, 44 guns; and the Countess of Scarbourough, 20 guns, captured by Captain John Paul Jones in European waters, the prizes of the Americans were minor naval craft averaging ten or twelve 4's and 6's. The British captured or destroyed about the same number as they lost, but their prizes were, on the average, larger and better armed vessels than those of the Americans. Seven of them were frigates. On the other hand the British had no victory so brilliant as that of Jones off Flamborough Head.

The secondary operations of the navy were more important than its primary. They mainly involved the protection of American commerce, the defense of certain Atlantic ports, the striking of the lines of communication of the British military forces, the attaching of the enemy's commerce at sea, and the threatening and assailing of her unprotected ports and coasts, both at home and in her outlying dependencies. Each of these forms of secondary operations will now be briefly considered.

The continental naval department defended American commerce by ordering its vessels to "attack, take, burn or destroy" the enemy's privateers. One illustration of such orders will suffice. In November, 1788, the marine committee of the continental congress wrote to the navy yard at Boston, which had control of naval affairs in New England, that "at present we consider it an object of importance to destroy the infamous Goodrich who has much infested our coast, cruising with a squadron of four, five or six armed vessels, from 16 guns downward, from Egg Harbor to Cape Fear in North Carolina." The infamous Goodrich belonged to a notorious family of Virginia tories, whose privateers during the Revolution struck terror to the inhabitants of the Virginia and Carolina coasts.

More than once did the continental naval department plan their capture, but without success.

The engagements between continental vessels and British privateers were often as bloody and hotly contested as any of the Revolution. An illustration of this is the well known fight between the American frigate Trumbull and the Liverpool privateer Watt. The Trumbull mounted 28 guns, and was commanded by Captain James Nicholson, the ranking officer of the continental navy; the Watt carried 32 guns, and was under command of Captain Coulthard. The fight took place on June 1, 1780, to the northward of the Bermudas. A notion of its character may best be gained from an extract from a letter from Gilbert Saltonstall, captain of the marines on board the Trumbull, written on June 14th, 1780. Saltonstall was in the thick of the fight and received eleven wounds.

"On the first instant, at nine o'clock in the morning, Lat. 36 degrees N., Long. 63 degrees W., we saw a sail from the masthead, directly to the windward. As soon as she discovered us she bore for us; we got ready for action, at one o'clock began to engage, and continued without the least intermission for 5 glasses, within pistol shot. It is beyond my power to give an adequate idea of the carnage, slaughter, havoc and destruction that ensued. Let the imagination do its best, it will fall short. We were literally cut to pieces, not a shroud, stay, brace, bowling or any of our other rigging standing, our maintop mast shot away, our fore, main, mizzen, and jigger masts going by the board, some of our quarter-deck guns disabled, through ensign 62 shot, our mizzen 157, mainsail 560, foresail 180, and other sails in proportion, not a yard in the ship but had received one or more shots; six shots through her quarter above the quarter deck, four in the waist; our quarter stern and nettings full of language, grape and musket ball."

The fight was indecisive. Both vessels withdrew seriously disabled,—the Trumbull to Boston, and the Watt to New York. A British account of the engagement places the account of the lost on the Watt at eighty eight and of the Trumbull at considerable more. The Americans gave their loss as thirty eight and the British as ninety two. The Trumbull had two lieutenants killed. Gilbert Saltonstall declared that there

had not been a more close, obstinate and bloody sea fight during the Revolution, not excepting that of John Paul Jones off Flamborough Head.

It is significant that the only naval captains that lost their lives in the continental service were killed with engagements with privateers. Captains Samuel Chew and John Skinner, both New England men, fell in action while in command of their vessels. Early in 1778 the brigantine Resistance, ten guns, was fitted out at New London, Connecticut, by Nathaniel Shaw, the continental agent at this port. Samuel Chew, a native of Virginia, but then a citizen of New London, was given command of her. On March 4, 1778, while cruising in West Indian seas, the Resistance had a desperate, though indecisive, encounter with a letter of marque of 20 guns. Chew and his lieutenant, George Champlain, were killed, and the Resistance was sailed back to Boston under the command of Lieutenant Leeds. Late in the summer of the same year, the General Gates, 18 guns, under the command of Capt. John Skinner, captured the brigantine Montague in an engagement in which Captain Skinner lost his life.

In addition to defending the American commerce by cruising against the privateers and small naval ships of the enemy, the continental vessels often threw their protecting arm around the trade of the states. The continental naval department often detailed its vessels to convoy American merchantmen and packets, bound principally to the West Indies and France. At times when the trade was bound for France, the continental ships accompanied even as far as the Grand Banks of Newfoundland, but as a rule their services did not extend beyond a few leagues from the American coast. Sometimes the naval department ordered its vessels to cruise off the Delaware bay or similar channel, to guide and protect incoming shipping.

The continental naval department coöperated with Washington and the continental army in the defense and attack of certain ports. In the campaigns around Philadelphia in 1777 and 1778, the continental vessels were united with the Pennsylvania state vessels, and the combined fleet was placed under the command of John Hazlewood of the Pennsylvania navy. For a time the American fleet and the two forts below Phila-

delphia on the Delaware held in check a British fleet which had ascended the river. On the capture of the forts the vessels could no longer hold their positions. Some of the continental vessels were burned to prevent their capture, while others escaped, passed the city under cover of night, and took refuge to the northward of Philadelphia. These were later destroyed by the British in a raid which they made on the shipping on the Delaware. The continental navy lost some ten or twelve vessels in these campaigns.

Late in 1779 the continental naval department ordered four of its vessels from Boston to assist in the defense of Charleston, South Carolina, which was threatened by the enemy. With these vessels, together with those of the South Carolina navy, a considerable fleet was available for a naval defense of the city. This was entrusted to Captain Abraham Whipple, the senior officer of the four continental vessels. Whipple advised that a naval defense at the bar on the seacoast, which lay to the eastward of the forts that commanded the entrance to Charleston harbor, should not be undertaken, and later he gave as his opinion that it was impracticable for the armed vessels to coöperate with the forts. Such timid councils prevailed, and in the end no naval defense of Charleston was undertaken. Three of the four continental vessels were dismantled, and their guns and crews were removed to reinforce the land batteries and troops in Charleston. On the fall of the city in May, 1780, all four vessels were lost.

In 1779 a continental ship aided a Spanish fleet in capturing Mobile. As a rule, however, the continental vessels were too small and weak to command success in the attack and defense of seaports. Several times the naval department placed part of its fleet under the control of Washington and the French admiral, when they were planning an attack on some port held by the enemy. Several vessels were ordered to coöperate in the joint French and American attack on Newport in 1778. In the fall of 1779 Washington and Count D'Estaing planned to attack Nova Scotia and Newfoundland. The continental fleet at Boston was to render them what assistance it could. This expedition was abandoned.

The continental ships struck at the enemy's lines of com-

munication between its army and navy in America, and the British Isles, Canada, the Bermudas, Florida and the West Indies. After the transfer of the war to the southern states in 1778 and 1779, transports running between New York and Savannah and Charleston were vulnerable craft. The first important capture made during the Revolution was that of a transport. One of the last days of November, 1775, Captain John Manly, in the schooner Lee, one of the vessels fitted out by Washington during the siege of Boston, took the brigantine Nancy. Among other stores the Nancy had on board 2,000 muskets, 100,000 flints, 30,000 round shot, more than 30 tons of musket shot, eleven mortar beds, and a brass mortar weighing ten thousand pounds. This ordnance was of the greatest value to the colonists.

The most successful haul of the enemy's transports was made in the spring of 1779. In order to protect the trade of the southern states, which the British were ravaging, the naval department ordered the continental vessels at Boston to sweep the coast from Cape May to the bar of South Carolina. On March 13th a fleet consisting of the Warren 32, Captain J. B. Hopkins, Queen of France 28, Captain Joseph Olney, and the Ranger 18, Captain Thomas Simpson, sailed from Boston for the coast of the southern states. Captain Hopkins, a son of Commodore Esek Hopkins, was in command of the fleet. On April 7th he captured the private schooner Hibernia. He learned from this vessel of the sailing of a fleet of transports from New York, bound for Brigadier General Campbell's army in Georgia, and laden with stores and supplies. On the next day fifteen leagues off Cape Henry, Hopkins fell in with the fleet and, meeting with trifling resistance, he made prizes of seven of its nine vessels. Hopkins now returned to New England with his eight prizes, and succeeded in bringing them all into either Boston or Portsmouth. The naval department congratulated Hopkins and his fellow captains on the successful outcome of their cruise.

The most important objective of the naval department in its operations was the capture of the British commerce in transit at sea. It planned to intercept England's sugar ships of the West Indies, her Newfoundland fishing craft, her Hudson

bay fleet laden with skins and peltries, her Guineamen laden with cargoes of ivory, gold dust and slaves,and her Mississippi trade with its lumber and furs. Plans were made by naval agents and naval officers, to ensnare the enemy's Baltic trade, the Irish linen ships, the Brazil whaling fleet, and homeward bound East Indiamen. The sending of frigates to the Coromandel coast to intercept the enemy's China ships and the trade of India was seriously considered. On one occasion the naval department designed to attack English vessels bound for Canada with cargoes of Indian goods. But generally it was fleets returning to England at which blows were aimed, for the many vessels which made up these fleets were like honey laden bees flying homeward to their hives.

The British fishing fleets on the Grand Banks of Newfoundland and the homeward bound West Indiamen were found most vulnerable. It is not practicable for a combatant to prey upon commerce far from its base of operations. The frequent manning of prizes depletes his crews, and compels him to make an early return home.. Then too, the chance of prizes being retaken is increased with the distance they must travel to reach safe ports. The operations of continental ships in European waters were made practicable by their use of French ports as naval stations. In attacking England's commerce, the naval department found most promise of a substantial reward in directing its vessels to cruise during the summer to the eastward of the Burmudas in the track of the homeward bound West Indiamen, laden with rum, sugar, cotton, coffee and other colonial products. These fleets sometimes consisted of as many as 175 merchantmen under the convoy of a few ships of war. Skilled seamanship found it comparatively easy to cut out a few sail from such large fleets. In three instances colonial ships made captures which netted them more than one million dollars each.

Two of these fortunate ventures were made in 1779 and the other in 1782. Early in 1779 the ship General Gates and the sloop Providence sent prizes into Boston which sold for $1,200,000. In August of that year a fleet of four vessels under the command of Captain Abraham Whipple fell in with the Jamaica fleet bound for London, and convoyed by a 32 gun

frigate, and three other armed vessels. Whipple without much difficulty captured ten large merchantmen laden with rum and sugar. Seven of these vessels arrived at Boston and one at Cape May, and the other two were probably retaken. The prizes with their cargoes sold for more than $1,250,000. In the fall of 1782 Captain John Barry in the frigate Alliance carried four Jamaicamen, richly laden with rum and sugar, into L'Orient, France, which sold for $3,100,000. This was the largest sum realized on any cruise during the Revolution.

The committee of foreign affairs of the continental congress proposed to the American commissioners at Paris the most extensive naval expedition planned for the continental fleet. This expedition was to be carried out by two or three of the frigates which the naval department were sending to France. These frigates being well manned were early in February, 1778, to sail from France to the French island of Mauritius in the Indian ocean, where they should refit and replenish their stores. The frigates should next proceed to the Coromandel coast, a twenty days' sail from Mauritius. Here they should intercept the enemy's China ships and also distress the internal trade of India. The prizes which they would capture could be sold in Mauritius, and the proceeds sent to Paris by bills of exchange. Goree was recommended as a better port of call than the Cape of Good Hope, where danger was to be apprehended from British vessels. In the same letter the committee of foreign affairs proposed an expedition against the British vessels on the coast of Africa. Neither the strength of the continental fleet nor the resources of the struggling colonists permitted them to undertake so extensive an expedition as that to the East India seas.

The continental naval department threatened and attacked the enemy's coasts and towns in the British Isles, Canada, and the West Indies. The movements of Captain Wickes, Conyngham, and Jones in attacking the British Isles are familiar to all. In November, 1775, two continental captains captured Prince Edward Island. An attack on the shipping of the Bermudas was ordered to be made, if it was found practicable. Nassau, New Providence, was twice captured by continental vessels, and once by a Spanish fleet and American privateers under the

command of Commodore Gillon in the South Carolina, of the South Carolina navy. The two continental vessels visited the mouth of the Senegal river on the West coast of Africa. Robert Morris when vice president of the marine committee of the continental congress planned to send a fleet of five ships against the British possessions in the West Indies and Florida.

These expeditions against British coasts, towns and dependencies had several objects in view. One of course was the capture of booty. To the extent that the expeditions were against the shipping and commerce of the attacked ports, their object was similar to that of fleets which cruised against shipping and commerce at sea. Another object was to force the enemy to withdraw part of his fleet from the coasts of the United States in order to defend his attacked possessions. To the extent that he did so the United States would be relieved. The cruises made in the waters around the British Isles had in view the lessening of the prestige of Great Britain, the shaking of her credit, the alarming of her inhabitants, and the raising of her marine insurance; and also the impressing of Europe with the power and courage of the new American nation, and, perchance, creating a diversion in its favor. Both a psychological and political element entered into the purposes of the cruises in the British waters. These cruises brought home to Great Britain and the continent a knowledge of the existence of a new flag and a new state in the family of nations.

The naval plan devised by Robert Morris, the vice president of the marine committee, deserves additional notice. It was to be put into operation by John Paul Jones and a fleet of five vessels. Jones was first to proceed to St. Christopher, in the West Indies, which was almost defenseless, capture the cannon, stores and merchandise there deposited, and then sail for Pensacola, Florida. Morris thought Jones might find it best to pass along the south side of Hispaniola, and alarm Jamaica by putting into some of its ports. Arriving at Pensacola he would find the town defended by two or three sloops of war, which could be easily silenced, when Pensacola would fall into his hands with its munitions of war, including one hundred pieces of artillery. Having reduced Pensacola, Jones should send a brigantine and a sloop to cruise at the mouth of the

Mississippi, in order to waylay the British merchantmen leaving there in March and April of each year with cargoes of indigo, rice, tobacco, skins and furs to the value of $500,000 sterling. Returning from the gulf, Jones might alarm St. Augustine, and finally he might refit in Georgia, North or South Carolina. He was directed to carry as many marines as possible for his operations on shore.

Morris's object in this expedition involved a fine bit of naval policy. He proposed not so much the taking of booty, as the alarming of the whole British nation, and forcing the enemy to withdraw some of her naval forces from the coast of the United States. "It has long been clear to me," said he, "that our infant fleet cannot protect our coasts, and the only effectual relief it can afford us is to attack the enemy's defenseless places and thereby oblige them to station more of their own ships in their own countries, or to keep them employed in following ours; and either way we are relieved so far as they do it." Morris proposed his plan as a substitute for one of Jones's which contemplated a descent on the west coast of Africa, and to the carrying out of which the marine committee had given its consent. Morris thought that the same results as Jones sought, could be obtained with less risk by "cruising windward of the Barbadoes, as all their Guineamen fall in there."

The naval department naturally planned and carried out enterprises which involved two or more forms of secondary operations, or both minor and secondary operations. Sometimes it ordered its vessels to take stations at sea such that they would be in a position to intercept both the West India trade and the enemy's transports plying between New York and New England. Commanders often cruised on the lookout for both the small naval vessels of the enemy and his privateers. Often the naval department left the specific object of a cruise to the navy board at Boston, or the commander of a vessel, and issued merely the general order to proceed to sea and cruise against the enemy.

The reader of this paper has probably drawn parallels, far from fanciful, between the solutions of the naval problems of the Revolution made by the continental naval department, and those of the Spanish-American war made by the board of

strategy at Washington. The naval problems presented to the two bodies were in certain respects different. Equally striking similarities appear. In both wars the United States was fighting a European power with possessions in the West Indies and the Asiatic seas. The attacks on Nassau and Morris's proposed expedition against the British West Indies correspond to the movements of the American fleet in theWest Indies during the late war. The operations of Wickes, Conyngham and Jones off the coast of the British Isles are matched by the proposed descent on the Spanish coast in 1898. The plan made by the committee of foreign affairs in 1777 to send a fleet of frigates to Mauritius and from thence to operate against the Coromandel coast looks singularly like Admiral Dewey's movement from Hong Kong against Manila.

The hope is to be cherished that America will never again cross swords with her kin across the seas, but if moved by some untoward fate she should, it is not too much to say that a naval board of strategy at Washington will devise plans of naval attack and defense quite similar to those of the continental naval department of the American revolution. The weak spots in a nation's armor often prove to be its outlying dependencies, especially when they are situated near the enemy's coast. The principles of naval strategy which led the continental navy department either to attack or to plan to attack Canada, the Newfoundland fisheries, the Bermudas, and the British West Indies are still operative, notwithstanding the vast changes which the past century and a quarter has witnessed in the methods of naval warfare, and in the distribution of the territory of the western hemisphere among nations, new as well as old. In a world of change the fundamental principles of naval strategy remain immutable.

THE NAVAL CAMPAIGN OF 1812.

BY JAMES RUSSELL SOLEY.

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In order to understand fully the merits of the early actions of the war of 1812, it is necessary to notice for a moment the policy of the naval administration during the period preceding the war, and the condition of the navy when the war broke out. The navy of that day and of the present really dates from 1794, when an act of congress provided for the building of six frigates, to check the depredations of the Algerian corsairs.

The old Revolutionary navy had passed entirely out of existence; and though some of the senior officers of the new ships were selected from the well known Revolutionary names, they were men who had been for ten years in private life, and their juniors had never seen any naval service. Selected hastily in the course of a few months, the corps of officers was necessarily an ill trained and unwieldly body; and Morris tells us in his autobiography how imperfect the selection was. Algiers gave the new navy nothing to do, but fortunately for the service, the energetic action of congress in 1798, in declaring reprisals upon French armed vessels, gave it active and salutary occupation. By the autumn of 1798 nearly the whole fleet, composed of all the frigates that were ready, and many other vessels numbering altogether about twenty, were cruising in the West Indies, where they remained for two years. In 1801, the Peace Establishment act, by reducing the number of officers of all grades, while it operated severely on some of the veterans, nevertheless proved of substantial benefit in winnowing the service of most of the chaff that had entered in 1798. The officers who remained, and who formed the nucleus of the modern navy, comprised a large number of able men, most of them young men, who were animated by

an intense esprit de corps, and ambition for the profession, and who developed later an extraordinary aptitude for it. All they needed was training in active service, and a field for the exercise of their undeveloped powers. This came to them in the Tripolitan war, which occupied the navy for about four years. It gave the junior officers the best possible training, under such commanders as Dale, Rodgers and Preble; and the earnestness with which they seized every opportunity for winning fame shows the zest with which they had entered upon the profession.

The foreign policy during the next few years was one of peace and self abnegation. The wars of Napoleon were then at their height, and the United States suffered the humiliations of a timid neutral between two unscrupulous belligerents. This timidity rose not so much from the weakness of the state as from the weakness of the parties. The naval campaign against France in 1798 had been very successful, as were subsequently the naval campaigns against England in 1812; and a bold policy might have led to a like success in 1805. But, unfortunately, the rivalry of France and England was reflected at home. The federalists would not hear of a war with England, nor the anti-federalists of hostilities with France; and though the former were generally the advocates of a spirited foreign policy, yet their indignation was never very marked upon a question of English aggression, and John Quincy Adams tells us that he abandoned his party because it resented the outrage of the Chesapeake in so lukewarm a fashion.

By way of retaliation for belligerent encroachments, Jefferson adopted the self denying measure of the embargo, which forbade the departure of any ships from the ports of the United States, except foreign ships in ballast and coasters. As an offensive measure it was a failure, while its effect at home was most disastrous. As it soon became evident that it threatened the mercantile interests of the country with ruin, it was replaced by a prohibition on importation from France and Great Britain. This was so far better, in that under it American vessels were free to go abroad and pursue such trade as they could. But it had one fatal result, which must have been

foreseen at its passage. Fully nineteen twentieths of the revenue of the state was derived from customs, and by the non-importation acts more than half the usual amount was withdrawn. The revenue fell from $17,000,000 in 1808 to $7,770,000 in 1809; and the government, while it was pursuing an aggressive foreign policy that might end in war, was voluntarily cutting off its own resources. The act was repealed in 1810, but the government, to save its self respect, was given authority, in case either power revoked its noxious degrees and the other refused, to revive the prohibition against the offender.

When congress met, late in 1811, a strong war party of younger men obtained the control of affairs. Though both nations had committed aggressions, and though France was far less capable of effective hostilities, the old antipathy of the anti-federalist party for Great Britain directed the energies of the new movement chiefly against that power. For this there was some excuse, in that France had latterly made a show of concession, to which England, more candid and direct in her negotiations failed to respond. The relations with England were, moreover, complicated by the grievance of impressment. The dominant party carried everything before it, and on the 18th of June, 1812, war was declared against Great Britain.

During all this period, when a rupture often seemed imminent, little was done to improve the navy. The last vessels of any size that were added to it were the brig Hornet in 1805, (later altered to a sloop) and the sloop-of-war Wasp in 1806, rating 18 guns each. The remaining efforts of the naval administration were devoted to the building of gunboats.

Attention was first directed to this species of war vessel by their success in the operations before Tripoli. For special services, such as that for which Preble employed them, as auxiliary to larger vessels, in flotilla engagements in shoal waters, and for attacking the picaroons and other piratical craft that infested the West Indies, they were no doubt of some use. But Jefferson's idea—and it was peculiarly his idea—was to transform the navy into a fleet of gunboats, to do away with the frigates, and if the country became involved in war, to

make it a defensive war, solely. It was claimed for the gunboats that, together with fortifications, they would be the best protection for coasts and harbors, the mouths of rivers, and shoal waters in general. This scheme of defense was a part of the isolating policy of the government—a policy which sought to draw the nation in upon itself, to surround it with barriers, to destroy intercourse and commerce with the rest of the world, and to repel attack by means of forts, embargoes, and prohibitions on importations.

During Jefferson's administration, congress was ready to carry out the plan to its fullest extent. In 1806 and 1807 over a million of dollars were expended in the building of gunboats. The materials for six ships of the line, which had been accumulated during Adams's administration, were devoted to the same object. One hundred and seventy six gunboats were built, and distributed in the bays and harbors; and the ablest of the older lieutenants were placed in command of flotillas, to enforce the embargo at the different ports, and to suppress the commerce they were commissioned to protect.

In 1809, upon a change of presidents, congress made an examination of the working of the system, and it was found that the one hundred and seventy six gunboats in the service had cost $1,800,000. The cost of the frigate President, mounting 56 guns, armament and all, was $220,000. Hence the money that was wasted on the gunboats would have built eight first class frigates; frigates which the British authorities always asserted were equal to small line of battle ships. It was also found that the annual cost of a frigate carrying 56 guns was $120,000, while that of 56 gunboats carrying one gun each was $650,000.

These figures put an end to the gunboat system. No more were built, and during the next three years they consumed the revenue without giving any proof of usefulness. In March, 1812, an act was passed directing that they should all be put out of commission. During the war the government got rid of them as fast as it could; and finally only three remained in the service, the rest having been sold for about one tenth their original cost.

During this period, the navy proper, apart from the gun-

boats, maintained a precarious existence. The government did not look upon it with favor, and its administration was none of the best. In 1806 congress fixed the number of seamen to be employed at nine hundred and twenty five, not enough to man three frigates. The affair of the Chesapeake in 1807, was used as an argument for the abolition of the navy, on the ground that foreign nations would not inflict insults upon our ships of war if we had no ships of war to be insulted. Though foreign relations grew far and far more complicated, the same arguments, or unreasoning denunciations, were repeated year by year in the debates upon the appropriation bill. In 1808, in a debate upon increasing the force in commission a representative from South Carolina said that he was at a loss to find terms sufficiently expressive of his abhorrence of a navy. He would go a great deal farther to see it burned than to extinguish the fire. It was a curse to the country, and never had been anything else. He had always voted against these high federal measures, and he thanked God he now had an opportunity to vote against them again.

Strange as it may seem, these words represented the general opinion of the majority in congress. The abhorrence was a matter of party discipline and party education. So strong was the hostility to the navy, that it is almost a wonder that the service was not abolished. But it found some defenders, men who, though in the minority, were not to be silenced by the partisans and intriguers who at that time controlled the legislature. It is a fact to be remembered by the navy, that in this period, when it was threatened with annihilation, it was ably and courageously supported by three statesmen from Massachusetts, in the senate by James Lloyd and in the house by Josiah Quincy and Joseph Story. Partly through their efforts, an act was passed early in 1809, directing the fitting out of the President, United States, Essex, and John Adams; and authorizing the preparation of other ships, the appointment of three hundred midshipmen, and the employment of three thousand six hundred additional men. In the debate upon the bill Quincy said: "I have been a close observer of what has been said and done by a majority of this house, and for one I am satisfied that no insult, however gross,

could force this majority into a declaration of war. To use a strong but common expression, they could not be kicked into a war. What has this majority done during the two years in which the people have been kept in daily anticipation of war, toward the maintenance of our rights? We have built one hundred and seventy gunboats, and we have a thousand militia in requisition. Do we mean to fight Great Britain with these? Are they competent to maintain our maritime rights?" In the same debate an increase of the navy was recommended by Story, by the construction of fifty fast frigates. In reply to the objection that they would all be captured he said: "I was born among the hardy sons of the ocean, and I cannot so doubt their courage and skill. If Great Britain ever obtains possession of our little navy, it will be at the expense of the best blood of the country, and after a struggle that will call for more of her strength than she has ever found necessary for a European enemy." These predictions were amply fulfilled.

The act which followed this debate, and the one passed in March of the same year (1809) to augment the marine corps, were the last measures taken to increase the navy before the outbreak of the war. For three years, with the prospect of war staring it in the face, congress did nothing in the way of preparation, not even during the long session of 1812, when the leaders were resolved to bring about hostilities. This was not from apathy or want of interest, but from an active spirit of opposition to what the party had been taught to look on as a high federal measure. In this very last year, though the naval committee recommended ten new frigates, congress only appropriated money enough to fit out the Chesapeake, Constellation, and Adams; and as if a war with Great Britain meant a desultory conflict for half a century, it provided for an expenditure of $200,000, annually, for three years, towards rebuilding three or four of the small frigates, too rotten to be repaired. With such encouragement the navy went into the war.

At the outbreak of the war the United States navy, exclusive of gunboats, was composed of twenty one vessels, of which fourteen were in commission. Of the other seven, one

was on Lake Ontario, three were repairing and three were beyond repair. Of the fourteen in commission, there were three frigates of 44 guns, one of 38, one of 32, and one of 28; while the rest were sloops, brigs and schooners, carrying from 10 to 18 guns each.

On the other hand there were in the British navy at the beginning of the year 1812, two hundred and thirty six ships of the line, of from 60 to 120 guns each, and six hundred and fifty nine vessels of the class of frigates and smaller. These frigates represent all the ships in the navy; of those actually in commission for sea service there were one hundred and two ships of the line, and four hundred and eighty two frigates and smaller cruisers.

The enormous disparity between our own navy and that of the enemy struck the government so forcibly at the outbreak of the war, that it was decided at Washington to lay up all the ships in commission. This was the logical extension of the administration policy. It was a self denying measure the same as the embargo. It was founded on the assumption that, as the enemy's force was overwhelming, it would be futile for us to keep up any force at all. The war policy of the government seemed to be to make a declaration, and to scare the enemy with bluster if possible, but to avoid any formidable preparations, which would lead their adversary to a vigorous pursuit of the war. Our safeguard and shelter from the resentment of foreign powers was to lie in their contempt—a feeling which it was our interest studiously to cultivate. In applying this policy to the navy, the cabinet was overruled by the president, who had only been persuaded to change his mind by the earnest remonstrances of Bainbridge and Stewart.

Under these circumstances little or nothing was expected from the navy, and so it was that when, in the first eight months three British frigates and three brigs or sloops of war were captured in engagements with single ships, the country was taken by surprise, and was ready to believe in the invincibility of the American men-of-war. Accounts were distorted and exaggerated until the notion became general—a notion which prevails more or less in the popular mind to this day—that the victories of American ships during the war were won

over superior force, and through the display of extraordinary prowess. As a matter of fact, however, in nearly every engagement in which we were successful, we had a decided advantage at the start, in the number and size of guns, in the composition and size of the crews, and in the strength and general equipment of the ships. Moreover, the crews of American ships were in many cases superior in their discipline to the English, and, above all, their skill in gunnery was far in advance of their opponents. Many of these advantages must be set down to the credit of the officers, no less than the successful handling of the ships in action. The superiority of equipment was also largely due to the energetic and wisely directed pressure of officers upon the naval administration. English officers, on the other hand, from long continued successes had grown slack, and the twenty years' war in Europe had exhausted the supply of good seamen, so that some of their ships on our coast were undermanned, or supplied with raw crews pressed into service. It was therefore doubtless due to the efforts of our officers that the advantages were on our side; still, there is no use of denying that in most of the single engagements we had the advantage.

As our officers had been careful and judicious in preparation, so they fought their actions with courage and skill; and our naval historians only injure their cause by seeking to represent them as victories won in the face of heavy odds. As far as bringing on an engagement was concerned, the American officers were generally less ready to do so than their opponents; and rightly, for the loss of a single ship would have been a far greater calamity to the country than the loss of a dozen would have been to Great Britain. England might readily have sacrificed twenty frigates in bringing all our ships into action, and would not have felt the loss seriously; while the series of actions would have extinguished our navy altogether. Throughout the whole war, American commanders followed a far more cautious system of tactics than the English, and on several occasions chose to avoid a combat with a ship nearly equal, rather than risk the safety of one of our diminutive fleet. The event proved their wisdom; of the seventeen seagoing vessels that could be utilized at the beginning, ten were

burned or captured during the war. The ships that escaped, comprising the Constitution, United States, Congress, John Adams, Hornet, and Enterprise, were only saved by the exercise of the greatest care and prudence.

The English mode of fighting, on the other hand, which they had learned in the wars with the French, was to attack any enemy they met, even though the odds were very much against them, and either demoralize him by a tremendous fire at close quarters or carry him by boarding. Their great superiority in discipline and training, and their wonderful solidity and tenacity, generally gave them the victory. Their uniform experience had taught them to think little of maneuvering for advantages in sea fights, and to set a far higher value on sheer bravery and elan in making an attack. The revolution of 1789, by introducing ideas of equality totally incompatible with discipline at sea, had disorganized the French navy; and, while in this condition, it received those crushing defeats from which it never recovered. In fighting with one of their ships, an enemy gained no special advantage by maneuvering; in fact, he needed none. The boldest plan was the safest; to go directly up to his antagonist, batter him for a while and then board, if he had not already struck. Hence the tactical skill, the art of maneuvering, the quality which in land operations is called strategy or generalship, where it is a great qualification for a military commander, was regarded as a thing of little moment by officers of the school of St. Vincent and Nelson.

During the war of 1812, and especially at first, the English captains used the methods that had previously proven so successful; and having everything to gain by victory, and little to lose by defeat, they could afford to run greater risks than the Americans. They had learned to look on an engagement with a larger ship as attended with little danger; and were surprised in turn to find that the dashing tactics of European warfare were at fault. Their enemy was wary, and maneuvered at a distance, using his long guns to advantage; his gunnery was most accurate, and told at long or short range with far greater effect than their own; his tops were filled with riflemen, expert marksmen, who brought down a man with

every shot. This explains the readiness with which the Guerriere, the Java, and the Macedonian engaged a superior force, and it explains also the rapidity and certainty of the fatal result. We cannot have too much admiration for these fine displays of courage on the part of the English captains; and we need not on that account think that the wary and cautious tactics of our own officers showed a want of bravery, for congress by its scanty provision for the national defense had forced this policy upon them. In discussing these actions, Sir Howard Douglas, a writer of great reputation in his day, commends this quality of the American officers to the English navy, in the strongest terms, under the name of circumspection. But Sir H. Douglas wrote after the American war; the word circumspection applied in the same way in 1812, would have been regarded by Englishmen as a euphemism for cowardice. Now, it is a noteworthy fact that all our captains in the frigate actions of 1812, Bainbridge, Hull, and Decatur, whose personal courage nobody can deny, had used this circumspection when engaged with an inferior force; while Lawrence, in the engagement with the Shannon in the following summer, though he had far greater need of it, in that he was more nearly matched with his opponent, went into the action with impetuous bravery, scorned all tactical advantages, and, after a gallant and bloody struggle lost his vessel.

Before going into the details of the war, one word about the various accounts of it. Soon after its close several books were published in the United States, filled with the brag and bluster for which Americans sometimes have been, justly or unjustly, condemned. The English official reports were not for some time made public, and some of these books having found their way into England, aroused the indignation of naval officers who knew the facts as they were. Hence the English naval historians have made it a special duty to answer these pretensions, and we may be said to have brought on ourselves much righteous reproach. The principal history of the British navy during the wars of Napoleon—from 1793 to 1815—is written by a lawyer named James, and is a wonder of careful and minute research. In the volume on the American war, however, he has lost or sunk all sense of

fairness or candor, and his bitter hostility to Americans and especially to American naval officers has made him rather the advocate of a cause than the annalist of a contest. He has devoted himself in this volume, with all the ingenuity and skill of a special pleader, to proving that the officers of the American navy, one and all, with the exception perhaps of Lawrence, who was beaten, were cowards, liars and blackguards. No charges can be too severe, no language too abusive to describe their conduct. According to James, they never fought when they could run away, they paid no regard to truth in their statements, they treated their prisoners with brutality, they resorted to the basest fraud and trickery to deceive an opponent. I know of no book in the language which contains such a mass of malevolent misrepresentations of acts and motives, such petty slurs upon men's characters, such dirty innuendos, and such coarse and vulgar abuse. Of course the book is a gross libel; but it is, nevertheless, the highest authority in England upon the subject of great naval wars. It is hardly necessary to say that the fascinating pages of Cooper, with which we are all so familiar, cannot serve as an adequate answer to James. A single page of James shows more research than any chapter of Cooper; and it has always seemed to me a pity that no naval officer has been found to write a complete refutation of the slanders of the English historian.

On the 21st of June, three days after the declaration of war, a squadron sailed from New York under the command of Commodore Rodgers, composed of the President, as flagship; the United States, Commodore Decatur, the Congress, Captain Smith; the Hornet, Captain Lawrence; and the Argus, Captain Arthur Sinclair. The object of the cruise was the capture of one hundred merchantmen, known to have sailed from Jamaica some time earlier for England, with a convoy. When two days out, on the morning of the 23rd, the squadron fell in with and chased the British frigate Belvidera, Captain Byron, armed, according to James with 42 guns. When the chase began, the Belvidera was about six miles off; but, in the course of the afternoon, the President, which was the fastest ship in the squadron, came up within a half a mile of her, and

perhaps nearer, and opened fire from her bow guns, doing some damage. Presently one of those guns, a 24-pounder, burst, and killed and wounded several officers and men. Among the wounded was Commodore Rodgers. The Belvidera returned the fire with four guns which had been shifted to her stern ports. A running fight was kept up in this way for some time, and as the ships in chase were gaining on him, Captain Byron cut away some of his anchors, threw overboard his boats, and otherwise lightened his ship. This had the desired effect, and the President gradually lost ground. At midnight the chase was given up as hopeless. The loss on each side was a little over twenty in killed and wounded, most of the casualties of the President resulting from the bursting of the gun. Unfortunately the delay prevented the squadron from overtaking the Jamaica fleet; and, after following it across the ocean, the ships returned late in August to Boston, having taken seven prizes.

At the time that the squadron left New York, the Essex was lying there, undergoing repairs. She was under the command of Porter, about this time promoted to a captain. On the 3rd of July, her repairs being completed, she sailed on a cruise alone. On the 11th, at night, Porter came up with several vessels, which he learned were British transports, under convoy of the frigate Minerva. Porter's intention was to run alongside the frigate and surprise her; but finding himself unable to do this, he cut off her nearest transport. The Minerva discovered the capture, but went on her way without molesting the Essex. The prize was ransomed for $14,000. She had on board between one and two hundred soldiers, on their way to Quebec to take part in the war.

About a month later, on the 13th of August, the Essex fell in with the sloop-of-war Alert, which engaged her, apparently without perceiving the difference in force. The action lasted only eight minutes. After a few broadsides the Alert surrendered, the men deserting their guns in a panic. The sloop had seven feet of water in her hold, and three men wounded. The Essex had no injuries or casualties. This was the first capture of a public ship of the enemy made by us during the war. It was chiefly remarkable for the disproportionate

injury to the two ships and for the short duration of the encounter. The Essex was far superior in the number and weight of the guns, in the number of men, in the fighting qualities of the ship; while the Alert, according to the English account, was, except in the commander, badly officered and manned, and the result showed unfavorably for the discipline and gunnery of her crew.

The prize was fitted as a cartel and sent with the prisoners to Newfoundland. Porter returned to the Delaware in September. During the cruise he made nine captures and recaptured five American privateers and merchantmen, making fourteen prizes in all. Two of these were burnt, one was captured by the Belvidera, and the rest were sent in or ransomed.

Before this time, an English squadron, composed of the Africa, a 64-gun ship, and the frigates Shannon, Guerriere, Belvidera and Æolus, under Commodore Broke, of the Shannon, had assembled on the coast, and was watching for our cruisers. About the middle of July the Nautilius left New York and, after a few hours sailing, fell in with this squadron. All the usual measures were taken to lighten the ship and to aid her escape, but after a six hours chase she surrendered to the Shannon.

On the 12th of July, four days before the capture of the Nautilius, the Constitution under Captain Hull, left the Chesapeake for New York. On the afternoon of the 16th, she fell in with Commodore Broke's squadron off Barnegat. I will not here go into the details of the famous chase, with which every one is familiar, and which we can now read in the spirited narrative of one of the principal actors, the gallant first lieutenant of the Constitution. On the 19th, after three days of incessant toil and anxiety, the ship finally lost sight of her pursuers, and a week later she landed safely in Boston.

After a week in port, Hull sailed on a cruise to the eastward. He took and burned some prizes in the gulf of St. Lawrence; and hearing that the squadron from which he recently had escaped was in the neighborhood, he steered to the southward.

On the 19th of August, at two o'clock in the afternoon,

when at sea, in about the latitude of New York, the Constitution made a strange sail to the southward and the eastward. Hull had already had information that an English frigate was cruising alone to the southward, and he suspected that this was the object of his search, and accordingly bore down for her. The wind was N.W., and the strange ship was sailing close-hauled on the starboard tack. At three o'clock the two ships were near enough to make each other out, and Hull's conjecture proved to be right. The stranger was the frigate Guerriere, of 38 guns, according to her nominal rating, which had left the squadron of Commodore Broke, and was on her way to Halifax.

At four o'clock the Constitution altered her course to S.S.W., gaining rapidly on her opponent; and at 4:45, being then between two and three miles distant, the Guerriere backed her main topsail and waited for the American ship to come up. Upon this the Constitution took in her topgallant sails, staysails and flying jib, took a second reef in the topsails, hauled the courses up, sent down the royal yards, prepared for action, and beat to quarters.

The two ships now closed. At five the Guerriere hoisted her colors, and five minutes later she began firing. According to the American reports, all her shot fell short. They were, however, returned with a few shots from the bow guns, and soon after the Guerriere wore, to prevent raking. The Constitution changed her course a little, to clear her opponent's quarter, and at 5:20 the latter fired a second broadside, and wore ship again. This maneuver was repeated three or four times, the ships discharging alternate broadsides as they were brought to bear. Finding that these movements separated the ships, Hull set his maintopgallant sail and steered directly for the enemy, who, finding at the same time that his maneuvers gave him no advantage, gradually bore up, and ran off under topsails and jib, with the wind on the quarter. The two ships were now heading nearly east, the Guerriere being still ahead and to leeward; but the Constitution closed rapidly up on her port quarter, at 5:45, and passed to her beam, at a distance of two hundred yards, and approaching nearer. At 6:05 both ships opened fire, as their guns could be brought to bear.

At this point the action may fairly be said to have begun, as little or no injury had been inflicted on either ship up to this time. In a few minutes, the heavy fire from the guns of the Constitution, double shotted with round and grape, began to tell, and at 6:15 Hull had the satisfaction of seeing his enemy's mizzenmast fall. The natural effect of the loss of after-sails would have been to cause the Guerriere to fall off before the wind, but this would have defeated Hull's purpose of passing longside of her to the windward and giving her a raking fire as he crossed her bow. In fact, this intention on the part of the American captain was so evident that the Guerriere's helm was put hard aport to keep her head off. But, curiously enough, notwithstanding the loss of the after-sails, and notwithstanding the port helm, the Guerriere came up in the wind, swinging round into just the position most favorable for the execution of Hull's judicious plan. This was no doubt due to the fact that the wreck of the mast falling over the side, acted as a drag.

The Guerriere's velocity now being retarded, Hull gradually ranged ahead, and at 6:20 he put his helm hard aport to cross her bow and rake her. The loss of braces on board the Constitution and the disabling of her spanker and mizzen topsail, prevented her from coming to starboard as quickly as was desired, but she had time to give two raking broadsides which swept the enemy's deck, and which were only answered by a few of his bow guns. The Guerriere's jib-boom had just crossed the Constitution's quarter deck when the latter bore up, putting her helm astarboard, to avoid presenting her stern to the enemy's broadside. This maneuver resulted in the entanglement of the enemy's bowsprit and the jib-boom in the Constitution's mizzen rigging, and the Englishman prepared to board. Morris, the first lieutenant of the Constitution, seeing this, suggested to the captain to call away the men to repel the boarders. This was accordingly done, but at the same moment Morris, who was standing on the taffrail and attempting to pass some turns of the main-brace over the Guerriere's bowsprit, to keep her fast, was shot through the body, and the two ships separated. During the period of close contact, the wads from the enemy's guns had set fire to

the cabin of the Constitution, but the fire was quickly extinguished. A few minutes later the Guerriere's fore and main masts went by the board, and at 6:30 she fired a gun to leeward in token of surrender.

The fate of the battle now being decided, Hull leisurely set his foresail and mainsail, and hauled to the eastward to repair damages. All the braces were shot away, the standing and running rigging was somewhat cut up, and some spars were lost. After passing half an hour in reeving new braces and in repairing the other injuries, he wore round and took a raking position to the leeward of the enemy, within pistol shot. Dacres meanwhile had been making a gallant effort to get his ship under command to renew action, but after clearing away the wreck, his spiritsail yard, his only remaining reliance, was carried away, and the Guerriere lay a helpless wreck in the trough of the sea, rolling her main deck guns under water. When the Constitution returned to her at seven o'clock, she surrendered.

Finding it impossible to take the Guerriere into port, on account of her shattered condition, Captain Hull set fire to her the next morning. She had then four feet of water and was sinking fast. In the fight she had fifteen officers and men killed, and sixty three wounded, six of them mortally. The Constitution received some injuries in her mast and rigging, though nothing that was not easily repaired. Her killed and wounded amounted to fourteen. The defeat was as overwhelming as it was unexpected. In half an hour's close action an English frigate had been compelled to surrender, dismasted, sinking, a complete wreck, with one third of her force disabled.

To understand the merits of this engagement, and of those which followed, which created so much elation in America, and so much depression in England, it is necessary to examine the construction and armament of the American and English frigates of this period. In the first place we must drop out of our minds any consideration of the rates of men-of-war of this period, which were purely conventional, and bore a varying relation to the strength of the armament. The three largest frigates in our navy, the President, United States

and Constitution, were all nominally ships of 44 guns, but in point of fact they usually carried 56. On the other hand, the British 36 or 38 gun frigates carried from 45 to 49 guns. In the second place the guns themselves in the American frigates were much heavier than those in the British. There were two classes of guns aboard of all these vessels, long guns on the gun deck and carronades on the spar deck. Of the latter, it is only necessary to say here that they carried a heavier shot than the others, but had a much shorter range; hence they required a smaller charge, and were shorter and lighter, and could be worked by a smaller number of men. Several of these were placed on the spar deck. In the English frigates of war this was not a continuous deck, but consisted of only the quarter deck and the forecastle, connected by narrow gangways, but open in the middle to the gun deck. As a rule, the English gun deck battery consisted of 18-pounders, and the guns in the forecastle and quarter deck were 32-pounder carronades, while our 44's had 24-pounders on the gun deck and 42-pounder carronades above. The Constitution was an exception however, in that she had 32-pounder carronades on her spar deck, like the English frigates, instead of 42's, as in the President and the United States. She had originally been armed like the others, but the strain was found to be too great, and the change had been made the year before. She retained her 24-pounders, however, in her gun deck battery. The only true way to estimate the true force of these ships is by comparing the weight of their shot at a single discharge. According to this method the battery of the Constitution was more powerful than that of her opponent by one half.

In regard to other material advantages, that is, advantages which were not due in any way to the qualities of the officers and men, the size of the Constitution, her sailing qualities, the thickness of her frame, and the stoutness of her masts and spars, were all greatly in her favor. Moreover, her crew numbered about two hundred more than the Guerriere, and they were more generally picked men.

Taking all these facts into consideration, they do not account for the vast difference in the amount of injury inflicted. What then were the other elements of our success? It can-

not be laid to extraordinary feats of daring—the conspicuous display of bravery lay rather with the smaller ship, which was ready for a plucky encounter with a superior force. It was not wholly in the discipline of the crew, though this was of the highest importance, and although the Constitution was remarkable in this respect, as was shown by the fortitude with which her escape was conducted a few weeks before. The all important point of difference, the one which served us during the whole war, was the practical training and skill of our crews in gunnery. They had constant exercise in target practice, and, as James says, ten shots with the necessary powder were allowed to be expended in play, to make one hit in earnest. The English crews, on the other hand, rarely or never fired their guns except in an engagement, and strict limits were fixed to the consumption of ammunition in target practice. Hence, in all our actions, a short time sufficed to disable the enemy; he was hulled repeatedly, and his masts were shot away, before he had accomplished more than a slight damage to our sails or rigging.

Another illustration of this is the action between the Wasp and the Frolic. The Wasp had left the Delaware on the 13th of October, and on the 18th met the brig Frolic, Captain Whynyates, at sea, about east of Albemarle sound, in charge of a convoy from Honduras to England. As to armament the two vessels were nearly matched. Each carried sixteen 32-pounder carronades, and from two to six additional guns, about the number and caliber of which accounts differ. The only long guns carried by the Wasp were two 12-pounders. She is also said to have carried two brass 4-pounders in her tops. The Frolic, according to a very explicit statement of Captain James, in his report of the action, carried, in addition to her carronades, four 12-pounders on the main deck, and two 12-pounder carronades on the topgallant forecastle. James denies that the Frolic carried six extra guns, and puts the number at four, two long sixes, and two 12-pounder carronades, one of which was lashed on the forecastle, and both of which he throws out of calculation in the comparative force. No authority is given for these statements, and unless sustained by other testimony, they cannot be considered of equal

weight with those of Captain Jones, who clearly had the best opportunity of knowing. Captain Whynyates says nothing in his report about the force of either ship.

In other respects, the advantages were on the side of the Americans. The officers and crew of the Wasp numbered one hundred and thirty eight, while those of the Frolic, men and boys, numbered only one hundred and ten. For the difference in the vessels themselves, the Wasp was heavier than the Frolic; added to which in a violent gale the day before, the Frolic had carried away her mainyard, lost her topsails, and sprung her main topmast; so says Captain Whynyates's report. These accidents had a direct effect upon the engagement.

At about eleven o'clock in the morning, the Wasp bore down for the Frolic; the Frolic waited to receive her and opened fire as she drew near. After five minutes of close fighting, the Wasp's maintop mast came down, followed presently by her gaff and mizzen topgallant mast. At the same time the Frolic's mainbraces were shot away, and she could therefore carry no sail on her mainmast. This enabled the Wasp to take an advantageous position, and she accordingly stood across the Frolic's bow, with the English ship's jib boom between her fore and main rigging. In this position the Frolic was boarded by the officers and crew of the Wasp, led by Lieutenant Geo. W. Rogers, but on gaining the enemy's deck they found no one to oppose them but a handful of wounded officers and men. No resistance was made, and the Frolic's flag was lowered by James Biddle, the first lieutenant of the Wasp. In this engagement, whatever disadvantages the Frolic may have been under at the start, her casualities were wholly out of proportion to them. She was much injured in her hull, both her masts fell immediately after the action. She had fifteen killed and forty seven wounded, some of them mortally; while the Wasp had only six killed and five wounded. The action was fought in a heavy sea, under very little canvas; but even so, the precision of the American gunners was far superior to that of the enemy. It is said that the Americans fired as the engaged side of their ship was going down, and the English as theirs was rising; which explains, in some measure, the difference in the damage each received and inflicted. Soon

after the engagement both ships were taken by the Poictiers, a seventy four, which came in sight before any preparations for fight could be made.

On the 8th of October, Commodore Rogers left Boston with the same vessels he had commanded before, except the Hornet. These vessels were the frigates President, United States and Congress, and the brig Argus. On the 12th, the United States and Argus separated from the squadron, themselves going in different ways. The Argus cruised for three months in the North Atlantic, took a few prizes, and returned to New York early in January. The President and Congress were particularly unfortunate in meeting few merchantmen, and they returned to Boston on the last day of the year, having made only two captures in the three months.

When the United States, under Captain Decatur, left the other vessels, she cruised to the S.E., and on the 25th of October, at sea, some distance to the west of the Canary islands, she fell in with the British 38-gun frigate Macedonian, Captain Carden. The difference in the relative force of the ships was even greater than in the case of the Constitution and the Guerriere, as the United States had 42-pounder carronades instead of 32's, and on the other hand, the Macedonian lacked two of the Guerriere's long 18-pounders, and their place was supplied by 9's of 12's. When the ships first sighted each other, at daylight, they were 12 miles apart, the Macedonian going before the wind, and the United States to the north of it; the wind was S.S.E., and the United States was close hauled on the port tack. In this way they gradually neared, but at 7:30, Decatur, uncertain as to the force of the enemy, wore and stood off. The Macedonian continued on her course, and would soon have overtaken her opponent, when the latter wore again with a view to closing. At this point, according to the English historian, Captain Carden should have kept on his course and run across the bow of the other ship and he was advised to do so by his lieutenant. But he preferred to keep the weather gage, and passing to windward of his antagonist, they exchanged the first broadsides at 9 o'clock. The Macedonian now wearing followed her opponent on the same tack, and at 9:20 came up with her quarter; at this point the fight may be fairly

said to have begun. The first broadside carried away the mizzen topgallant mast of the United States, and the mizzen topmast and gaff halyards of the enemy; this produced an equality in sailing, and enabled the United States to oppose the guns on her quarter to those on her enemy's bow in a running fight. The diagonal fire from the United States proved very effective, but at 10:15 she backed her maintop sail and allowed the enemy to come up with her.

As soon as the ships were abreast, there began that tremendous disabling fire of the Americans, which had been the main element in their previous successes. In the course of half an hour, the Macedonian's mizzenmast was shot away, her fore and main topmasts gone, what was left of her mast and rigging badly cut up, her upper battery, with the exception of two guns, disabled, one third of her crew killed and, one hundred shot in her hull. The English fought with great bravery, and tried to get on board the United States but the ship would not answer the helm. The fight was now practically over, but the supply of filled cartridges on board the United States having given out, she drew off, refilled her cartridges at leisure, tacked and returned to a commanding position on the stern of the enemy, who immediately surrendered.

In this action, the same facts are noticeable as in the earlier engagements, but in a more marked degree. The odds at the start are strongly in favor of the Americans in the size and strength of the ships, the number and weight of the guns, and in the number of men. The English tactics are bold, dashing, more so than in the action with the Guerriere; the English captain maneuvers carelessly, and neglects his advantages. The Americans on the contrary, mindful of their pigmy navy, as the English papers called it, and the great loss to the country that would follow the destruction of a single frigate, are wary and cautious to such an extent as almost to decline an engagement and to lead their enemies to charge them with cowardice; a charge which no one certainly could more easily repel than Decatur. The accurate and careful gunnery of the Americans and the great rapidity of their fire quickly disable the enemy, carry away

his mast, shatter his hull, silence his batteries; while in return, he inflicts little or no injury. The inequality in the loss of men is still more striking. The Americans have only seven killed and six wounded; while the English loss foots up to the comparatively enormous total of 36 killed and 68 wounded. As in the capture of the Guerriere, the American ship hauls off when the engagement is practically at an end, to renew her preparations, and after attending to these matters at her leisure, she only returns to receive a final surrender.

Not long after the beginning of the war, the government had resolved to send a squadron to the south Pacific, to destroy the unprotected British commerce in that quarter. With this object, on the 27th of October, shortly after the capture of the Macedonian, the Essex, still under Captain Porter, left the Delaware, and a few days later, the Constitution, now commanded by Captain Bainbridge, and the Hornet, Captain Lawrence, left Boston. The ships were to rendezvous at Bahia, and other ports on the Brazilian coast. As is well known, the Essex missed the other ships and went on the intended cruise alone. The Constitution and Hornet reached Bahia near the end of December, and the Hornet was sent in, Commodore Bainbridge remaining alone in the neighborhood of the coast.

On the 29th, at nine o'clock in the morning, as the Constitution was sailing by the wind, on the port tack, the wind being from the N.E., two vessels were seen in the N.N.E. These were the British 38-gun frigate Java, Captain Henry Lambert, and an American merchantman, a prize of the Java. The prize was cast off and sent into Bahia, but before her arrival was recaptured by the Hornet. The Constitution tacked, and the two opposing vessels now stood for each other; but after a time the Constitution, finding her signals unanswered, went about and stood to the southeast, to draw the Java away from her companion, which in the distance Bainbridge mistook for a ship of war.

About noon the Java hauled up, steering a course parallel to the Constitution. As the morning passed away she came rapidly up and was made out to be an English frigate. At 2 P. M. the two ships were within a half a mile, the Java to the

windward, and the firing began. They were both sailing by the wind, in the same direction as that of the Constitution, when the enemy was first sighted. At 2:20 the Constitution wore to avoid being raked; the Java wore also, and the ships being again side by side on the starboard tack, exchanged broadsides, by which the wheel of the Constitution was entirely shot away. Again the Constitution wore, and the Java, performing the same maneuver, at 2:25 passed just astern and missed an excellent opportunity of raking her opponent. At 2:40 she again passed the stern of the Constitution, and this time fired a few guns. Immediately after, the Constitution luffed up close to the Java, and for a few minutes the action was spirited; here the head of the Java's bowsprit was shot away. At 2:52 the Constitution wore again, and the Java, as the quickest way to get about, tacked; but after coming up in the wind, she paid off very slowly, from the want of head sails. As she was in the midst of this operation, the Constitution seeing her opportunity, luffed up astern of her and gave her a raking fire; then wearing again, she resumed her course, and the Java once more got alongside. Here the decisive part of the engagement began. At 8 minutes after 3, as Captain Lambert, foreseeing the inevitable result, was preparing to board, and with that view was bearing up towards the Constitution, the Java's foremast fell and prevented the attempt. At 3:15 the Constitution wore across the Java's bows, and brought down her maintopmast; then luffing to leeward of her, poured in, first her starboard, and then her port broadside. Remaining alongside in this last position, she continued a heavy fire, carrying away the gaff and spanker, and finally the whole mizzenmast. Before this, Captain Lambert had fallen, mortally wounded, and the command of the Java devolved upon Lieutenant Harry Chads, who still continued bravely defending her. Soon after four, her fire ceasing and all her flags being down, Bainbridge supposed she had surrendered; and then he performed that maneuver which we noticed in the actions of the Guerriere and the Macedonian, of hauling away from his disabled enemy and leisurely repairing his own injuries. From the remarkable similarity in the methods of the three captains, Hull, Decatur and Bainbridge, one might suppose it was a

regulation of the department. As in the other cases, Bainbridge returned in about an hour, and took up a raking position only to receive the formal surrender of his adversary.

It is hardly necessary to go over all the points of resemblance between this case and the other two—points upon which we have already dwelt at length. The relative force in guns was about the same as in the fight with the Guerriere; while the crews were more nearly equal, owing to the presence on board the Java of a large number of supernumeraries. As far as one may judge from conflicting statements, there were about 480 officers and men on board the Constitution and about 100 less on board the Java. The difference in the killed and wounded was very great; the Java having 22 killed and 102 wounded; while the Constitution had only 9 killed and 25 wounded. At the close of the engagement, the Java was such a wreck that she could not be carried into port, while the Constitution, though she gave up her cruise in the Pacific, had no difficulty in returning to the United States.

After the departure of the Constitution, the Hornet remained off Bahia, blockading the English sloop-of-war Bonne Citoyenne, which was lying in the harbor. After three weeks thus occupied, she was driven off by the arrival of the 74-gun ship Montague. She now cruised for some time off the coast of Brazil and Guiana, and captured two valuable prizes. On the 24th of February, at the entrance of Demerar river, the Hornet discovered a vessel of war on her weather quarter, edging down for her. This was the English brig Peacock, commanded by Captain William Peake, and mounting sixteen 24-pounder carronades, and two long 6-pounders. The Hornet, as soon as she made her out to be an enemy, cleared for action, and kept close by the wind, to get the weather guage. This was some time after 4 o'clock in the afternoon. At ten minutes after five, the Hornet tacked and passed close to the windward of the enemy, the two ships exchanging broadsides. As the Peacock wore after passing, the Hornet bore up, received the star board broadside of the enemy, ran him close on board his star board quarter and kept up such a heavy and direct fire that in less than fifteen minutes he surrendered, being literally cut to pieces, as Lawrence says in his report.

Immediately afterwards the mainmast of the Peacock fell, and a signal of distress was hoisted. It was found that she was sinking rapidly, having then six feet of water. Every effort was made to save her and the prisoners were taken off as quickly as possible; but before the work was finished, she went down, carrying with her 13 of her crew and 3 men from the Hornet. Captain Peake and 4 men were killed in the action and 33 wounded. The Hornet lost only 1 killed and 4 wounded—2 of the latter by the bursting of a cartridge; her rigging and sails were somewhat cut, but her hull had little or no damage. It was, like most of the others, a victory over a somewhat inferior force, in that the Hornet was armed with 32-pounders against her opponent's 24's; but it was a victory of a remarkably quick and successful character. The Hornet immediately sailed for home and arrived at Holmes Hole on the 19th of March.

Besides the Wasp and the Nautilus, only two of the navy had been captured during this period. One of these was the brig Viper, captured by the British 32-gun frigate Narcissus, in January, 1813. The other was the brig Vixen, so closely associated with the Nautilus with Prebles' operation against Tripoli. Both vessels were built or bought in 1803, and both were altered from schooners to brigs in 1810. The Vixen carried 12 18-pounder carronades, and 2 long 9-pounders. At the time of her capture, November 22nd, 1812, she was cruising among the West Indies, under command of master commander George W. Read. She was taken by the British frigate Southhampton, of 32 guns, commanded by Sir J. L. Yeo, after a chase in which every effort had been made to escape. Soon afterwards, both vessels were wrecked on one of the Bahama islands.

As no further engagements of any consequence between national vessels took place until the action btwteen the Chesapeake and Shannon in June, we may say that the events related comprise the first year of the naval history of the war. What had been the results? During this period, the navy had captured in single engagements, three frigates and three brigs, or sloops-of-war. At the outbreak of the war, we had 6 frigates and 8 small ships or brigs in commission; while upon the

coasts of America were three squadrons of the enemy, any one of which was a match for all of ours. On the Halifax station there were 24 vessels, frigates and brigs, not counting the schooners; on the Jamaica station 22, and among the leeward islands 17. And all that this immense force, more than three times the size of our own, could accomplish was the capture of one sloop-of-war, the Wasp, disabled after an engagement, and three diminutive 12 and 10 gun brigs, one of which was taken by a squadron; the result more than justified the cautious tactics of our officers. It was only in the wise husbanding of resources that any result was attained; here lay the secret of an end so marvelously disproportionate to the means.

To the results of the great engagements must be added the vast number of merchantmen made prizes by privateers, as well as by national cruisers. Of these over 430 were reported in this first year, without counting recaptures, of which there were a great number. This was a loss that touched the enemy more materially, at the moment, than the capture of 6 men of war, in a navy whose ships were counted by hundreds. It was only the moral significance of the great sea fights that made them so important. For twenty years, English ships had been accustomed to victory over every enemy, even in the face of heavy odds. The nation looked upon them as invincible. Upon its maritime superiority, the government based pretensions which, if admitted, would have made commerce an English monopoly. Englishmen only knew of American policy and American armaments to despise them; and when the war broke out, it gave them little concern, and it was the intention of the government to prosecute it at leisure in the enemy's country. The capture of the Alert was looked upon by the English officers as an accident, a thing of no moment, which was only to precede the extinction of the little American navy. The loss of the Guerriere astonished them for an instant, and served, at least, to establish the fact that the Constitution was something more than a bundle of pine boards, under a bit of striped bunting, as she had formerly been called in derision. But as loss followed loss, and capture followed capture, as they saw the Frolic, the Macedonian, the Java, and the Peacock successively taken, the revulsion of feeling

was tremendous. The journals and magazines were filled with letters and essays, with minute calculations aiming to show the enormous advantage possessed by the vessels they had derided. The naval administration was attacked, and called upon to take more energetic measures. Ships of line were razed, for the express purpose of fighting the President and the Constitution to advantage, and the squadron on the American coast was reinforced by some of the most powerful ships in the navy. As a Boston paper wittily put it, the English, in the spring of 1813, were sending out frigates to America under convoy of line-of-battle ships. But the most important effect of the American victories was to show the hollowness of the English pretensions to the control of the ocean. In view of the possibility of future wars, it was idle any longer to advance the theory so arrogantly put forth by English writers, that the frontier of England was high water mark on every shore, and the British seas were wherever a 32-pounder could be floated.

The course of events had produced a result no less marked in America. Doubtless in the enthusiasm of the moment, the circumstances were exaggerated and distorted; but however they might be presented, the fact remained that American ships had beaten their enemies. The navy suddenly became the most popular branch of the public service; and its popularity was redoubled by comparison with the reverses of the army, whose campaigns in the north had been one long series of almost uninterrupted disasters. The war party, the party of the democratic republicans, was now only too ready to pet and patronize the navy, which it had hitherto so steadily opposed; while the justification of the "high federal measure" of former years had reconciled the federalists to the war. As the news came of victory after victory, each one so decisive and so unexpected, the most bitter partisan could not help feeling a glow of enthusiasm; and the country at last learned to look upon the navy as its only real protection, as the securest defense of the national honor.

THE NAVY IN THE WAR WITH SPAIN.

BY IRA NELSON HOLLIS.

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The success of our navy in the war is only what we had reason to expect, considering the difference between the resources of the two countries and the qualities of the men engaged on the two sides. The ships did their work so quickly and with such precision that we are likely to be led into erroneous conclusions, if the conditions which made their victories possible are not very carefully studied. It will not be safe to draw too many lessons from the results. In the first place, we must not forget that our enemy was so weak and unprepared that it seems almost pitiful to glory over him. Military prowess passed away from Spain many years ago, and her organization to manage the modern ship, composed principally of machinery, is wretchedly deficient. In the next place, our ships were never even severely tested, as they would have been against a stronger foe with greater staying power. We have only to imagine the situation if a northern port had been attacked by a good sized fleet while our whole effective navy was off the coast of Cuba, to obtain some idea of what might have been our condition in a contest with a maritime country. Let us hope that self confidence over our victories may not lead us to early disaster.

The great triumph of the British navy under Nelson was achieved when the naval administration was utterly corrupt, and the whole system of promotion formed a bitter grievance. Success came only through the entire inadequacy of the other side. Yet the British acquired convictions of their invincibility which made them the easy prey of American seamen in the war of 1812. Not that our navy is at all corrupt or lacking in good judgment, but it may suffer from false notions instilled

into the minds of our congressmen by an easy success. The price of achievement is constant effort.

To a certain extent, the lesson that we have learned is practically the same as that stated briefly by a French admiral writing of our victories in 1812: "There is success only for those who know how to prepare it." Our chief glory, therefore, is careful preparation and in accurate fitting of means to end. This remark applies mainly to the individual ships in service before the war broke out, and not to the general preparedness of the country for a severe struggle. There are many elements which go toward success in war, and the commonest of these is courage. Most nations, with proper training and good leadership, will produce good soldiers; it is only a question of time. Thorough familiarity with the weapons and instruments placed in their hands is one of the requisites even of courage. The lack of mechanical instinct accounts for the failure of some nations to produce first rate seamen, especially in these days of machinery upon the sea. This quality is perhaps the vital difference between Americans and Spaniards. The latter seem incapable of grappling with the construction and management of guns and machinery. The war, therefore, sets clearly before our people the value of education and technical training to a specific end, and the lesson is applicable as well to the vocations of peace as to the preparations for war.

But at no time have we been prepared for a prolonged conflict against a well equipped navy, and our fortunate exodus from the affair should serve as a warning. We had at the outset only a few well selected types of ships manned by a first rate personnel, or what has been called the nucleus of a good navy. The smaller craft for picket, patrol, and supply duty had to be obtained and equipped in a great hurry. In not a few cases the money placed at the disposal of the president was squandered, to the minimum benefit of the country. This is doubtless inevitable in stress of emergency, when all the safeguards of purchase and inspection do not obtain. On the eve of the recent war the supply of powder for the navy was at a very low ebb, through the neglect of congress, and the bureau of ordnance deserves no small credit for making good the deficiency so quickly that not a ship lacked ammunition

when the demand for it came. This speaks volumes for the efficiency of the system prevailing in the navy department.

While our ships were individually well prepared for the conflict, the fleets as a whole were at first composed of ill assorted vessels. There had never been a settled policy in congress looking toward the development of the navy. As a consequence, we find monitors of ten knots speed and torpedo boats of twenty knots associated in the blockade of Cuba. The squadron that went to Porto Rico was made up of battleships, torpedo boats, and monitors, with an average speed pulled down from fifteen to ten knots for the benefit of the last named. It seems absurd to have expected vessels of little freeboard and of minimum coal capacity, designed especially for harbor defense, to cruise in squadron, and yet the department was forced into the selection of these ships for want of others. Then, again, we had no choice but to send two monitors on the long cruise across the Pacific. The torpedo boats suffered all kinds of ill usage, even taking part in the bombardment of shore fortifications. They served as tenders, dispatch boats, scouts, and in fact as anything except torpedo boats. Some of them carried only a few hours' supply of fresh water for their boilers, which would have been ruined by the free introduction of salt water; nevertheless, they were required to steam hundreds of miles. It seemed a pity, but the officers felt obliged to use what was at hand, rather than to delay the campaign for boats better adapted to the purpose. Later, the converted yachts and tugs, armed in great haste, arrived to take their places. And it may be added that these little boats rendered effective service; two of them participated in the battle of Santiago.

The history of the naval part of the war falls naturally into four chapters,—the preparation, the blockade, and the total destruction of two fleets; but it is not the purpose of this article to give more than a passing glance at the two principal events. Our small fleet in the Pacific went from Hong Kong to Manila, destroyed a Spanish fleet, and held the bay until an American army arrived to control the situation on land. A fleet in the Atlantic closed up the harbors of Cuba, and de-

stroyed a second Spanish fleet off Santiago. Incidentally, there were many smaller conflicts in Cuban waters.

The problems which confronted the commanders on the two oceans were essentially different, and time will show them to have been solved with equal ability and good sense. The situation at Manila was very simple. Upon the declaration of war, Admiral Dewey was turned out of Hong Kong by Great Britain, and all other Asiatic ports were closed to him. He was seven thousand miles from home, a distance which none of his ships could make without recoaling, and his line of communication was liable to interruption at any time. Furthermore, the safety of our Pacific coast trade was in jeopardy so long as a hostile vessel remained in the orient. The duty was a plain one,—to obtain a base in the Philippines, and to capture or destroy every Spanish ship that could be found. With rare good judgment, Admiral Dewey made straight for Manila, and caught the whole fleet before they had time to scatter. He had already proven himself to be a man of foresight by loading up with provisions and coal before war was declared. When the English told him to go he was ready. His fleet passed through the fortified entrance of Manila bay by night, and attacked the ships and shore batteries simultaneously. The victory over what must be conceded to have been a weak and disorganized foe, although gun for gun there was not much difference between the two sides, was a great one, in the splendid management of the American ships, and in the results which must flow from our enforced entrance into Asiatic politics.

There was not an armored ship on either side, and the battle sheds little light upon construction for the future. We know that the Spaniards suffered fearfully from fire, and that our ships escaped with little damage. No victory was ever purchased more cheaply; not a man was killed on the American side.

The task before Admiral Sampson was immensely more complicated. He had to maintain the blockade over a long coast line, to be on the lookout for torpedo boats and ships whose whereabouts he could not fix, and to convoy troop ships. The sustained readiness and vigilance of the fleet, during its

long wait before Santiago, were enough in themselves to make the reputation of an ordinary commander in chief.

The progress of the blockade, the numerous attacks upon Spanish fortifications, and the search for Admiral Cervera's fleet will form an interesting story when all the threads can be gathered together in a connected whole. The work of the navy in the West Indies was virtually completed at Santiago, and our ships were set free for a movement against the coast of Spain. As the Atlantic was at the same time freed from all danger of fleet cruisers, the home coast no longer required protection. The naval battle at Santiago was very different from that at Manila, in the character of the ships engaged. The Spaniards had six of their best vessels: four armored cruisers, and two very fast torpedo destroyers, with an average speed of eighteen and a half knots. We had four battleships, two armored cruisers, and several smaller craft, with a mean speed of fifteen and a half knots. In both cases, the maximum speed of the slowest ship is taken as the average for the fleet. There were only two very fast ships on the American side, the New York and the Brooklyn, and the former was hull down to the eastward of the harbor. Admiral Cervera's plan was, therefore, to go out quickly, turn to the westward along the coast, and disable the Brooklyn before the slower ships could come to her rescue, thus carving out a road to the sea. The plan, though well conceived, could be carried out only in part. He did not succeed in disabling the Brooklyn, which was evidently maneuvered with a view to chasing, and five of his ships were overwhelmed by the American fleet before they had time to gather full headway. The battle had resolved itself into but little more than an exciting target practice for our ships, when each Spanish vessel, in turn, headed toward the beach, and hauled down her flag. The Cristobal, Colon, which had passed through the fire without injury, and had escaped to the westward, survived only two hours. The Brooklyn, and, to the surprise of everybody, the Oregon, overtook her about fifty miles from the mouth of the harbor. Her burst of speed had lasted only a short time, and she had not averaged more than fourteen knots, just six knots less than she was capable of making. Her captain struck his flag and

ran her ashore without a fight. Our ships did their work with the precision of machines set up on shore, and nothing broke down in stress of action. The rapid and complete destruction of the whole Spanish fleet, within three hours and a half after it had emerged under full head of steam, forms a victory big enough for all of us, as reported by Admiral Schley; and yet one cannot help sympathizing with the American commander who said, "Don't cheer, boys; they are dying." We lost only one man.

When the Spanish ships came out, the Oregon and the Gloucester appear to have been the only ships ready for them, and nothing but lack of engineering skill prevented two of them from escaping. Had the Colon really attained her speed, she could easily have outrun all the American ships. As it was, the Brooklyn, which should have overhauled her rapidly, was distanced at the start. The unexpected had occurred, and she was not ready. Some of her boilers had no steam, and the forward propelling engines were not coupled up. Fifteen or twenty miles would have been lost in bringing her to full speed, if the Colon could have done her best. The Iowa and the Indiana were even worse off than the Brooklyn. The Oregon, on the other hand, was able to make even better than her maximum recorded speed in less than half an hour after the order was given. From a position of fourth place in the line, she passed the other ships and overtook even the Brooklyn, a faster ship by four knots. It is very comforting to know that Admiral Cervera's plan would not have succeeded, even if he had been able to overcome the Brooklyn.

The Oregon's performance, which officers of other ships pronounce one of the most magnificent sights ever witnessed, will always remain the ideal toward which our navy must strive. She made a long voyage, at fair speed, from California to the coast of Florida, without accident or repairs, and joined Admiral Sampson's fleet in first rate condition for immediate duty. After a number of weeks off Santiago, she was still ready to do her best, and even to excel anything else on the station. This splendid record was possible only with good workmanship and a very capable engineering staff. This combination is a necessary requisite to the highest success of a

well conducted battleship under steam. The readiness of the Oregon to do her best illustrates in a forcible manner the influence of small things upon a ship's career. Her steam joints were all tight. Consequently, there was so little waste of steam or of fresh water that no sea water had to be pumped into her boilers, and none of the boilers had to be laid off for cleaning and repairs during the entire blockade. The other ships had greater or less difficulty in making up the fresh water supply, and their boilers suffered from the use of salt water. When Cervera appeared, the Oregon had good fires in every furnace.

Another marked feature of the battle was the part taken by the Gloucester, a converted yacht with a few rapid-fire guns placed on board. Her maximum speed was fully a knot below that of the slowest Spanish ship, and she had no protection to her machinery; yet her commander fearlessly turned her against the two dreaded torpedo boat destroyers, while they were still under the protection of the shore batteries and of the enemy's fleet. As he says in his report; "It was the plain duty of the Gloucester to look after the destroyers, and she was held back gaining steam until they appeared at the entrance." In the captains' reports, several of the battleships claim to have struck one of them with a heavy shell. It is probable that they were both finished by the Gloucester. If Commander Wainwright's action savors of rashness, let one stop to ask whether it was not better to risk a small yacht against torpedoes than to send in a battleship. It was as deliberate a piece of self renunciation as we have in our history. There is a curious story connected with this incident. When the Gloucester turned to intercept the torpedo destroyers, she had to cross the line of fire from the Indiana, and her captain felt quite reassured by a signal on the latter ship which he read, "Gunboats will close in." The commanding officer of the Indiana afterward stated that the signal he ordered was, "The torpedo boats are coming out."

The Spaniards appear to have been frightened, and their officers to have taken advantage of the earliest possible excuse for running their ships ashore. As one of the Oregon's officers remarked: "The Colon was weak. She surrendered with a

good two hours' fight left in her." Beyond the fact that they came out to hazard an escape in the face of great odds, there are few acts of heroism recorded in their favor. Their men were slaughtered and their ships destroyed, with little damage to their foe.

The deficiency of mechanical skill throughout the Spanish navy was counted upon to give our sailors a decided advantage but no one supposed the Spaniards would display what at this distance looks like cowardice. It may have been the untrained man in the presence of the machine. Courage springs from two sources,—experience in the work which the men have to do, and entire confidence in their leaders. Even a brave man may run from a cow, if he has not been brought up on a farm. Familiarity with guns and machinery is the essential element of success in a modern battleship. It was probably ignorance which robbed the Spaniard of his courage. Added to this, he found himself so suddenly under a withering fire that he could do nothing with his own guns. The board ordered to examine the wrecks found many of the guns loaded, thus indicating the haste with which their crews had deserted them. Some of the gunsights had evidently been set for thirty nine hundred yards at the beginning of the action, and they had never been changed, although the ships had closed up to a thousand or fifteen hundred yards. The most significant aspect of this sad failure is that it sprang from deficiency in that kind of knowledge which probably cannot be supplied in many generations.

For obvious reasons, the war has shed little light upon future developments in naval warfare. Many details of construction will be changed, no doubt; but there have been no startling revelations destined to render our battleships antiquated, or even seriously to impair their efficiency. Hereafter the minimum of combustible materials will enter into the construction of fighting ships. The battle demonstrated beyond peradventure the danger from fire. In many cases the Spaniards were driven from their guns by burning woodwork, and their fire mains were cut by shell. This experience will relegate all water mains and steam pipes to the hold well below

the water line, with branches rising to the necessary connections on the upper decks.

The value of rapid-fire guns was so clearly shown at Santiago that improvement can hereafter follow only along the line of a more rapid fire. The smaller guns are already fitted with special mechanism to facilitate loading and firing, and we shall be obliged to extend the system to the whole battery. Our chief lesson, however, in connection with battleships is that we need more of them. The cost is great, but these ships are well nigh impregnable; and they must continue to hold their own as our main reliance for offense and defense. Higher speeds will undoubtedly be demanded. The coal problem has apparently solved itself. Our ships found no trouble in taking coal from colliers at sea, and it was habitually done at Santiago before Guantanamo bay was captured. It follows, therefore, that a coaling station is a convenience, and not an absolute necessity, in conducting a campaign far from home ports.

Cruisers like the Columbia and the Minneapolis had no real test. As scouts they are too large, and as fighting vessels they are of no real value against an armored fleet. The country would profit by putting the money for such ships into a subsidy for merchant vessels of sufficient size to serve as transports or scouts in emergency. The smaller cruisers and gunboats did fine work at Manila and on the blockade, but we must not conclude from their immunity against shore batteries in Cuba that they would be equally fortunate again. Some of the attacks seem almost foolhardy, and the use of torpedo boats in a fortified harbor, except as a desperate measure, should not be encouraged.

We have learned next to nothing about torpedoes. They played no part in the war, except as a moral barrier at Santiago. It seems doubtful if they will ever prove dangerous to any but a careless foe; on the other hand, they may become a source of real peril to the ship which is trying to use them. Two torpedoes exploded on the Almirante Oquendo, and killed a great number of men. One was reported to have been struck by the fragments of a shell, and the other to have been set off by the heat of the flames near it. A loaded torpedo may thus become a more serious menace to friend than to foe. The fast

torpedo boat accomplished none of the terrific feats we expected. The duties performed by our own boats have already been described, and the principal business of the Spanish destroyers was evidently to keep out of the way. Their defeat by an ordinary yacht must have been very humiliating. One advantage possessed by our fleet around the entrance to Santiago harbor added materially to their harmlessness: the attack could come only from one quarter, and the skillful manipulation of search lights destroyed all hope of success. The contrast between our early fears of the torpedo boat flotilla and its subsequent achievements is simply ludicrous. It would not be safe to draw sweeping conclusions as to the use of these craft in future wars. If the Pluton and the Furor had been handled by Englishmen, the Gloucester would probably be at the bottom of the sea, and some of the larger ships might possibly have suffered a like fate.

The monitors seem to have been out of their element on the blockade. We had no need of them in the defense of coast or harbors, and, with none of the excitement of the chase, they served principally as prisons for a few unhappy officers and men. Our experimental craft, such as the dynamite cruiser, the submarine boat, and the ram, had no opportunity to indicate their possible utility. The Vesuvius threw a few hundred pounds of dynamite upon the hills outside of Santiago, and she may have exerted some moral pressure toward the surrender, but there is nothing to prove that she is of value to the country.

Men are, after all, more important than types of ships, and we may well inquire what we have learned about them in stress of action. It has been asserted that the war has demonstrated the perfection of our organization, and that it cannot be improved. This is like selecting a crew for a four mile race by a half mile spurt. The trade of the seaman has been changing during the past generation, and while we know him in peace, we have not had time to study him in a war which would call out all his strength and resources. So far as physical courage is concerned, we have seen that our sailors possess the same qualities in the presence of the machine that their ancestors possessed in the old sailing frigate. Time has not

changed their nature, however much it may have modified their occupation.

The attempt of Somers, ninety four years ago, to destroy the Tripolitan fleet with a fire ship is paralleled by Hobson on the Merrimac. The two cases have many points in common: both crews carried explosives for the destruction of their ships; both planned to escape in small boats after having applied the match; both entered boldly a well fortified channel; both left friends waiting outside to pick them up; and both failed to accomplish what they had set out to do. There the likeness ceases. One went in under steam, with directive power dependent upon himself, and all his men were saved; the other depended upon wind and sails, and all were lost. The deed of Hobson and his crew is only what we have a right to expect of our men and our race. Many officers of the fleet volunteered for duty as soon as they heard that the Merrimac was to go in. Few other opportunities for individual heroism presented themselves, and our list is brief only on that account. The journey of Lieutenant Blue on a scouting expedition around Santiago, the coolness of Cadet Powell waiting close under the batteries in a steam launch to carry back the Merrimac's crew, and the rescue of many prisoners from their burning ships are all of a piece.

The contrast between the two nations stands out very clearly in connection with the Vizcaya. The torpedo boat Ericsson ran close alongside of her, and sent a small boat to take off all that were alive of her crew. A few boats from the Iowa assisted. The Vizcaya was on fire fore and aft; the ammunition on board was exploding, and the guns that had been left loaded were going off one after another in the intense heat, to say nothing of the proximity of the shore. The position of the little craft has been described as perilous in the extreme. Our men risked their lives repeatedly to help their fallen enemy, but no sooner were the Spaniards transferred to the deck of the Ericsson than they urged immediate withdrawal, without regard to their comrades who had been left behind. To the honor of our navy, Lieutenant Ushur remained until every living being had been rescued from the burning ship. A similar scene was enacted around the two torpedo boat destroyers.

It was a case of mad panic on the one side, and of perfect coolness on the other. One officer of the Vizcaya afterward stated, on board the Iowa, that they were obliged to close the gun ports on the disengaged side of the ship, to prevent the men from jumping overboard rather than face the American gun fire.

Even the cadets fresh from the naval academy caught the spirit of their countrymen, and entered into the contest with the greatest zeal and fearlessness. During the blockade, a number of picket launches were kept close around the entrance every night, to guard against surprise. These small boats, in charge of cadets, sometimes approached within a hundred feet of the shore, and remained all night. They had orders to go out at the first streak of dawn, and they were almost invariably fired on. One boat got nine shots through her hull. The danger seemed to be an incentive to these boys, and there was considerable rivalry among them for the privilege of taking the night picket.

The behavior of the seamen, firemen, and marines was beyond praise. Happily few lost their lives, while all were prepared to risk them. The story of the men in the fire rooms of the Oregon has the true ring of the old navy. They had no share in the exciting, spectacular part of the fight. Their duty was simply to push the ship ahead with all their might. Shut up below an armored deck in watertight compartments, they were in the presence of dangers which they could not see, and their safety depended upon the good judgment and courage of their comrades. Yet they thought only of getting their ship into action. In the long chase of the Colon the strain began to tell on them, and the chief engineer, walking up to the bridge, requested the captain to "fire a gun just to cheer my men up." The roar of a thirteen-inch rifle acted like magic upon their flagging energies, and gave them a new incentive to shovel coal. Apart from the rapidity of movement introduced by steam, the whole scene resembles the old fleet actions of the English navy in its best days. We may safely say that the blockade of Santiago, the carefully planned attack, and the total destruction of six good ships were carried out in a manner worthy of the finest traditions of our race.

It was a curious phase of the war to find deck officers serving as engineers on torpedo boats, and an engineer serving as deck officer on a converted yacht. The change from one duty to the other is not so violent as it seems, for the men received practically the same education at the naval academy. Our striking success is chargeable in a large measure to familiarity with machines. There was little opportunity for the desperate courage which the Spanish might have displayed. It would appear, therefore, that any system which contemplates a more thorough training in engineering all through the navy is in the right direction.

THE HEROES OF THE NAVY.

BY CHARLES C. FITZMORRIS.

[Charles C. Fitzmorris, author; born May 1, 1880, Fort Wayne, Ind.; educated in the public schools of that city and Chicago. Began his business life as a reporter on the Chicago American, with which he has been connected constantly and which he has represented as staff correspondent in various parts of the United States and abroad. Author of newspaper and magazine articles on various topics.]

The invention of the modern battleship, with its impenetrable turrets and fighting-tops, and long range guns, the advent into warfare of the submarine boat and the Whitehead torpedo, and, above all else, the Spanish-American war, have combined to relegate into a past that is seldom recalled to mind, the days when our navy was struggling for recognition—the days between the Revolution and the Rebellion. New conditions have brought forth a new class of men; new battles have given us another list of heroes. The modern warship, steel-clad and speedy, has made the death grapple that Paul Jones loved almost impossible. The torpedo, moved by electricity and guided by a brain a mile or more away, has made feats like that of Lieutenant Decatur in the harbor of Tripoli unnecessary. But none the less the deeds of those men will live while there is history—men like Jones, Decatur, Worden, Perry, Farragut and a long line of others.

In the history of our country's brave men there is none whose exploits excelled those of Paul Jones, the Scottish gardener's son, who gave the best years of his life to his adopted country and died, forty five years old, penniless, in Paris. Not until a hundred years had elapsed was his body recovered and given a resting place in American soil, with fitting tributes from a grateful nation.

He was born on the estate of Lord Selkirk, at Arbigland, Scotland July 6, 1747. His father, John Paul—the son later added Jones to his name—was gardener in charge of the estate, and when Paul was born, remarked: "A boy eh? Weel, I mak' me no doot he'll be what his feyther and his grandfeyther before him have been—a gardener." But it was not destined to be. At twelve years of age the boy decided to go to sea, and

went. He shipped to America, joining his elder brother, who had been adopted by a wealthy family in Virginia. Years later, when William died, the family begged Paul to take their name and thus he become John Paul Jones. The sea called him however, and after years spent in resisting the desire, he sailed on a merchantman bound for Liverpool. He gave up all hope of conquering his yearning for a sea life. He wanted to be a sailor and above all a fighter, and in 1775 he was given command of a ship, with the rank of senior lieutenant, in the new navy that the independent congress intended to build. His ship was the Alfred, and John Paul Jones floated from her peak the first American flag unfurled on the ocean. The flag was of silk, with a coiled rattlesnake ready to spring and the motto "Don't tread on me."

Commodore Esek Hopkins, in charge of the vessels of which Jones's command was one, was a cautious man of the sort little admired by Jones, whose nature was impulsive, with a daring that knew no fear and hesitated at nothing. He fretted with impatience under the regime of his commander and waited impatiently for his opportunity.

It came at last. He was given the ship Providence, with twelve guns, and started at once in pursuit of the British. From that time on, his life, full of peril before, was in jeopardy as often as he could manage it. He sailed in under the side of a British hulk that he had mistaken for a trading vessel—his particular victims—only to find it a British man-of-war. Before the startled Britishers had recovered from their surprise, he had poured a volley into them, broadside, and was escaping. He was not pursued. The British captain of the Milford—it was one of England's best ships—knew pursuit was useless, for he had recognized Jones. Others on board who saw the little man standing on the foredeck at the wheel, as the Providence slipped from beneath the guns of the Milford, knew him too.

"That man is the devil of the seas—Paul Jones"—they told each other.

With his ship, the Ranger, he coasted along Scotland and actually visited his old home, pillaged the house of Lord Selkirk of its plate—which he afterwards returned, to his credit be it said—burned a merchantman, in the harbor of White-

haven, with his own hands, after his force had been repulsed in an attempt to set fire to the shipping under the guns of the fort, and, retreating to the Ranger, escaped unscathed.

But the climax of his career was the battle between his ship, the Bon Homme Richard, and the Serapis, the latter one of the finest ships in the English navy, the other a rotten hulk that had been discarded as almost useless.

Jones knew the condition of the ship, but, relying upon assistance from his consorts who were with him, he attacked the Serapis, which was convoying a fleet of merchantmen.

"What ship is that?" hailed Captain Pearson of the Serapis, as Jones's ship bore down upon him.

The reply was unintelligible and the first answer to the repeated hails of the British ship was a broadside poured upon her by the Richard. The ships closed. Broadside after broadside poured through the Bon Homme Richard, silencing her guns and tearing rents in her sides through which the water poured. The prisoners were put to work at the pumps but despite their efforts she settled. A sailor aboard the Richard, after a terrific volley had been poured into the ship, ran to the stern crying "I can't see the captain," and shouted for quarter, dragging down the ensign. Pearson, of the Serapis, heard the frantic cry. "Have you surrendered?" he called through his hands.

"I haven't begun to fight yet" came the answer from the deck of the Bon Homme Richard. There, hatless, his face covered with blood, and a revolver in his hand with which he had felled the man who had shouted for quarter, stood Jones.

The fight continued, until, from the foretop of the Richard a sailor threw a hand grenade to the deck of the Serapis, that, rolling through the hatchway exploded a row of cartridges, tearing out the interior of the British ship. Pearson struck his colors then, and Jones, hastily transferring his men from his own ship, boarded the captured vessel and cast adrift from the Bon Homme Richard which sank five hours later. The battle had lasted four hours and there had been fearful slaughter on both sides. The decks of the ships literally ran blood and every foot of the Bon Homme Richard was splintered by shot and fragments of shell.

Congress gave Jones a medal, France made him a chevalier, Catherine of Russia made him an admiral. Yet, years afterwards he died alone, poor, all but forgotten, in cheap Paris lodgings. The very place of his burial was unknown until early in the summer of 1905, when an expedition equipped by Gen. Horace Porter, then American ambassador to France, located it in the cellars of an old building in a poor quarter of Paris. The body was brought to the United States by an imposing fleet of modern warships, with every honor the navy could devise.

With the passing of Jones the epoch of which he was a feature ended. A marked change took place in the navy of the United States, between the Revolution and 1801. The maritime war against France and the Barbary pirates, the latter's depredations long tolerated by this country, brought forth new opportunities; and as fast as they came there came men to seize them. It was then that the Enterprise sailed to the Mediterranean sea to teach the pirates that the power of the United States was far reaching and that its commerce was not lightly to be interfered with. Aboard her, sailing under the rank of lieutenant, was Stephen Decatur. The frigate Philadelphia, Captain William Bainbridge, accompanied the Enterprise.

Captain Bainbridge and his crew fared ill. They chased the pirates well but not wisely, and the result was that they were captured and the Philadelphia, with captain and his crew aboard as prisoners, was pulled up into the harbor beneath the batteries of Tripoli as a prize. It was determined to recapture the Philadelphia or destroy it. From his prison Captain Bainbridge sent out secret instructions to the commander of the Enterprise. Lieutenant Decatur was chosen to carry out plans that had been made to outwit the pirates. With a ketch, a native boat, that he had captured he started out after nightfall with a small picked crew of volunteers. There were none aboard the ketch that expected to return—least of all did Decatur, but they never faltered.

Into the harbor, beneath the guns of the fort and the batteries of the captured Philadelphia the little boat stole quietly. Suddenly from aboard the Philadelphia came a hail.

The Italian pilot of the ketch answered and before suspicion was aroused, the ketch had made fast to the fore-chains of the Philadelphia. Then the true nature of the boat was discovered. A sailor on the Philadelphia peering over the side saw the armed men lying flat upon the deck of the smaller boat and gave the alarm with wild cries of "Americans, Americans." But the alarm came too late. The Americans, with Decatur at their head, swarmed up the sides of the Philadelphia. They mowed down all before them. Fast and furious the fight raged until the Turks, terror stricken at the suddenness of the attack and the terrible determination of the Americans to recapture their vessel or die, took to the water or secreted themselves in the hold of the vessel. Though their numbers were greatly in excess of the little band of Americans, the fight was brief. When the possession of the boat was assured, the boarding party divided, one part keeping watch while the other placed combustibles throughout the ship. Within twenty minutes—before the boarding party had withdrawn many hundred feet from the burning vessel—she was afire from stem to stern. Indeed, so well were the combustibles scattered and so thoroughly did the members of the boarding party do their work that many of them had difficulty in escaping from the burning vessel. Not a man was lost of the boarding party however, and they returned to the Enterprise safely, to be received as heroes.

Many men achieved fame during the war upon the pirates. Among them the name of Master Commandant Isaac Hull stands forth prominently. Hull, who was some four years older than Decatur, had seen service in many other battles before he engaged in the work of sweeping the seas of the pirates that preyed upon United States commerce. In the Tripolitan war he distinguished himself by many feats of daring and bravery, until in 1812 he was commander of the forty four gun frigate Constitution. The Constitution was an excellent boat and in excellent condition—American through and through. Its build had been laughed at by British commanders, but Hull was proud of his ship, and justly so. While in Chesapeake bay he received orders to join Captain Rogers' squadron in New York and on the way there, July 17, fell in

with a British blockading squadron. It was the beginning of a long chase that has no parallel in the history of the country for many of its features. For sixty hours the Constitution fled before the superior force of the enemy, and for sixty hours the British ships pursued, outgeneraled at every turn by the boat they had laughed at. Early in the chase the wind died out entirely. Captain Hull ordered out his boats and began towing. To the British sailors and commanders this was a new idea but they were quick to adopt it. In this manner the chase continued until the Constitution, taking advantage of a light breeze that sprang up, increased the distance between it and its nearest pursuer. But the wind died away again and the English, massing all their boats on one frigate, rapidly drew nearer to the Constitution. But the ingenious American commander was not to be caught that way. A line a mile long was spliced together and to the end was attached an anchor which was taken ahead of the frigate and dropped overboard, while the men aboard the Constitution, heaving away like smiths, drew the vessel up upon the anchor while the British fell behind until they dropped out of the chase after the elusive Yankee in disgust.

But his flight—although from overwhelming odds—nettled the brave captain and, risking the displeasure of his cautious superiors in the navy department, and ignoring the possibility of a court martial, he sailed out of Boston Harbor without orders. He fell in with the Guerriere, commanded by Captain Dacres, who had made boasts galore of what he would do to the Constitution if it ever crossed his path. There was no hesitation in engaging in conflict on the part of either of the captains but there was much fine seamanship before the vessels finally headed for each other. Broadsides were poured in across the decks and through the sides of the Constitution, but still she came onward without firing a shot. On the decks of the boat the crews stood at their guns, the lock-strings taut, waiting for the word to fire. It came when the American vessel was almost upon the Guerriere, and with the command there was poured in upon the British vessel a broadside that swept it from side to side, tearing through the sides and clearing the decks of every man upon them. The victory was won

in that broadside. When the firing ceased, the Guerriere lay with struck colors—a battered wreck that was blown up at sea.

There were many other heroes of the war of 1812. Out of Boston harbor Captain Lawrence sailed with the Chesapeake and met the Shannon. The boats drew so close together that they fouled and the crews, each bound for the deck of the enemy's boat, fought hand to hand across boards stained with blood until the brave Lawrence fell mortally wounded.

"Don't give up the ship, boys" was his dying cry as he sank back into the arms of his officers. Repeating over and over again these words he died.

Oliver H. Perry, another hero of the war of 1812, with the same indomitable spirit that moved John Paul Jones, left the work of superintending the construction of a fleet on Lake Erie before the work was finished, gathered together nine insignificant craft and attacked the seven vessels of the English fleet. His vessels were uncompleted and he had sailed a day and a half after leaving Erie before he sighted the British fleet of seven vessels, new and excellently equipped. Setting the example to the other vessels of his fleet Perry directed his ship, the Lawrence, against the Detroit, a fine new brig just completed by the English. Riddled by shot and shell from three ships that poured broadsides into his vessel, the Lawrence continued the unequal struggle until every gun was silenced and not a man remained on deck. As the last gun was disabled he lowered his flag, left the stars and stripes flying at the masthead and, stepping into a boat, was rowed to the Niagara, the flag wrapped around his body. Every gun that could be brought to bear was concentrated upon the little boat but it reached the Niagara in safety and Perry, hoisting his flag, continued the fight. The British gave up the struggle and left the victory to Perry who announced it in the simple sentence, "We have met the enemy and they are ours." The victory was one of the most decisive ones of the war. It gave the United States control of the great lakes and forever released the northwest from threatened occupation by the British.

The war of 1812 ended, as all things human must, and peace rested upon the navy as upon the rest of the country until the outbreak of the Civil war. During the early history of this

struggle the naval achievements recorded were few until the battle of the Merrimac and the Monitor, the latter captained by J. L. Worden. The Merrimac, until the Monitor fought the historic battle of the Ironclads, held undisputed sway at Hampton Roads, where the union vessels lay. Her very name was a terror and the damage the vessel had done was enormous. This was the condition of affairs in 1862, when Flag Officer Marston, in disobedience of the orders from Washington, dispatched the Monitor, in charge of Captain Worden and manned by a crew of fifty eight men, to give battle to the mighty Merrimac. Every man that went into the little vessel felt that he was going to his death. Indeed there were many that predicted she would not even float long enough to reach the Merrimac.

The Monitor was an experimental craft; the Merrimac was the most terrible foe the union had to deal with, yet not one of the men aboard the little one-turreted steamer hesitated. She reached Newport News without accident and the hearts of the crew were cheered, for thus far she had verified the prediction of her inventor, Captain John Ericsson. Quietly and unostentatiously she reached the waters where the Merrimac lay, and as the latter, ignorant of her existence, began an attack upon the union fleet the little boat slipped from beneath the lee of the vessel and made for the Merrimac.

The confederate vessel had ten guns; the Monitor had two. The crew of the former outnumbered the Monitor's crew more than six to one. There was little anticipation of victory in the minds of any of the men that watched the fight from the union side as it opened. The first gun was fired by the Monitor. A porthole was suddenly opened in the side of the round turret, a long gun shot out and was fired, then disappeared within the turret. The first shot was harmless and the Merrimac replied with a broadside that was expected to dispose for once and all of the intrepid Yankee craft. But the shot rattled harmless from the turret and before the next volley could be fired the little vessel ran in under the confederate's stern. Then it was recognized for the first time that the Monitor had an advantage. She could fire from the revolving turret at close range, while the guns of the confederate vessel were

powerless. But the guns of either boat worked little havoc upon the other and suddenly the Merrimac, recognizing the futility of wasting ammunition, drew back and charged. It was a move that had gained many fights but in this case it was useless. The blow glanced off harmlessly from the Monitor, which charged in turn, tearing open the bow of the Merrimac. The fight was won by the Monitor then but a lucky shot from the Merrimac seriously damaged its turret and it withdrew from the fight. The confederate vessel did not follow and the fight was left undecided. The battle resulted in the destruction of the Merrimac indirectly however, for the loss of Norfolk forced Captain Tatnall to blow the vessel up to prevent its falling into hostile hands. The battle however marked the beginning of a new epoch in naval warfare—the epoch of the turreted armored battleship, the beginning of the warship of to-day.

David G. Farragut, the man who opened the Mississippi river through lines of hostile forts and in spite of barriers placed in the river to prevent that very purpose, is another of the men whose memory lives in our history. It was the idea of David D. Porter to open the river, but Farragut, as his senior, was placed in charge of the work, and his success is the best testimony offered in support of his selection.

The confederates had erected a barricade across the delta of the river at New Orleans, formed of rafts of logs and chains and cables. Two forts, Fort Jackson and Fort St. Philip, defended the city and a fleet of gunboats supported them. Farragut laid his plans with care. A fleet of mortar boats was sent ahead to engage the forts and pour a constant fire upon the forts and gunboats while Farragut, aboard the Itasca, drove ahead towards the barrier at full speed. The bow of his vessel struck the barricade with irresistible force. It snapped, and the river was free. That night the advance was ordered and, with the Cayuga leading and the Pensacola following, the movement began. A withering fire was poured upon them by the confederate forts and gunboats. Tugs shot out from both sides of the river, towing fire rafts that they steered against the sides of the river. The Hartford, Farragut's flagship, was the first attacked by the fire rafts and it caught fire almost

immediately, being saved from complete destruction only by the most heroic work on the part of its crew. But the river was open. The progress up the river and the aid that was brought to the union forces through Farragut's daring exploit are known. The gaining of the foothold was what Farragut had been ordered to do and he had done it.

In the history of the brave deeds performed during the Rebellion there is always place for the name of Lieutenant William B. Cushing—the man who frustrated the attempt of the confederates to put into service the Albemarle, built to take up the work of the Merrimac, but a great deal more powerful and dangerous vessel than the Merrimac had been. Incomplete as she was when she was launched in the Roanoke river she took part in an attack upon Plymouth and sunk the Southfield. A fleet was assembled to destroy her but failed in the attempt. Then, while the vessel was tied up at Plymouth awaiting the completion of a sister ship Lieutenant Cushing volunteered to destroy her. With a torpedo placed upon the end of a spar, Cushing started towards the boat in the dead of night, making his way in a small launch. He reached the Albemarle but found her protected by a raft that extended around every side of the vessel. Before he could devise a means of reaching the side of the vessel he was discovered. Refusing to accept defeat, Cushing backed his launch away and taking a start at the raft, drove the prow of the launch with the torpedo underneath the raft and against the side of the Albemarle and pulled the trigger that operated the torpedo. A terrifie explosion followed, and raft, launch and vessel went to the bottom. Cushing, with a calmness that characterized him, slipped into the water and swam back to land, to make his escape within the union lines unharmed.

There were other heroes, but these are the ones whose memory will live longest with us as the men who stood ready to give their lives that the country might live. They have given way to a new class of naval men—men as brave in every way but yet so different! The spectacular exploits of the early days of the country's history were so many that history refuses to record all of them, but they have been handed down from

generation to generation—from as far back as the early days of the Revolution.

The Spanish-American war brought out its heroes to take their place and receive their praise in the history of this generation. Greatest of these is Admiral George Dewey, the hero of the Spanish war, who conquered the Spaniards in Manila bay in the greatest sea battle since Trafalgar, annihilating the Spanish Asiatic squadron under Admiral Montejo, destroying eleven and capturing five vessels and all the land batteries, without the loss of a single man on the American side. Dewey was born in Montpelier, Vt., Dec. 26, 1837, entered the navy as soon as he was old enough and was with Farragut in the dash to open the Mississippi river. He was promoted rapidly and in January, 1898, assumed command of the Asiatic squadron. May 1, 1898, at the head of his squadron he entered Manila bay, braving the mines concealed in the harbor and opening the greatest naval battle in our history, winning without the loss of a man. He was appointed rear admiral, and congress on hearing officially of his victory passed a resolution thanking him for his services to the country. He was promoted to admiral in February, 1899.

OLD AMERICAN SEA FIGHTS.

BY HJALMAR HJORTH BOYESEN.

[Hjalmar Hjorth Boyesen, 2d, editor and author; born Ithaca, N. Y., July 7, 1879; graduated Columbia college, 1900; became managing editor the Cosmopolitan when 21 years old; has written many articles chiefly for that magazine.]

There is something grand and imposing in a naval battle in midsea which is lacking in even the greatest encounters of vast armies. In the one there is always the possibility that reinforcements may arrive, news of a truce be brought or that nightfall will cover a successful retreat, leaving the defeated of to-day to form the nucleus of a victorious army of the morrow. But in the early days of the American navy, when a ship was sent out usually unaccompanied and with the broadest and most general orders, those on board realized that the possibility of assistance from any source was reduced to a minimum. When, with spreading sails, a vessel is drawing to close quarters with an enemy, surrounded only by a dim expanse of horizon, there is an element of finality which lifts men out of the ordinary affairs of life. Death must be looked in the face. A common fate impends, for the purpose of such an encounter is the mortal wounding of the enemy's ship, entailing probably the destruction of all on board.

The classification which divides men according to business or profession is of little use in judging them. The broadest distinction which may be made between men is that which ranks them among either those who accomplish or those who fail. In summing up a life the only true measure by which a just estimate may be formed is based on a consideration of what good or evil has actually been done. Intentions, however good, play of themselves an insignificant part. It is chiefly because the record of American naval officers has been one of most brilliant accomplishment under the heaviest difficulties that it is interesting to consider their careers. Particularly are the earlier sea fights instructive. There was then more room for individual action on the part of the officer in command, since he usually cruised alone and directed his

actions as seemed best to him, communication with him, once he was out of port, being well-nigh impossible.

Early American naval success is undoubtedly due in a measure to the character of the first settlers of the country. All the European nations which were powerful on the sea had settlements in North America. England, Holland, France, Spain and Portugal were represented by bands of adventurous colonists, differing widely according to nationality, religion, character, and mode of life, but possessing in common instinctive nautical skill. Moreover, the settlements were all on the coast and the only safe means of communication was by coasting-vessel. As early as 1632, twelve years after the Pilgrims' landing, a hundred-ton vessel was launched on Mystic river, Massachusetts. But beyond the fact that they were naturally a seafaring people, lies a truer reason for the success which meant so much to the young republic. Removed from all but the simplest kind of living, with muscles trained in daily struggle with resisting nature, the race was physically strong; with bitter conflict and ever-present danger inevitably to be foreseen, the coward dared not emigrate to the new land, and the physical strength of the men on whom the future of our republic depended was matched by their moral courage. In measuring a burden to be shouldered they estimated not the means of evading it, but the amount of strength required to bear it to its appointed place.

The American navy really dates its birth back to a short while after the battle of Bunker Hill, when the continental congress ordered the building of thirteen ships of war. Almost all of these small vessels were captured or burnt to avoid capture before the war was over—not, however, before they had done good service for their side.

Abraham Whipple, a Rhode Islander who had successfully captained the privateer Gamecock in the French war and now owned a ship of his own, was recognized as commodore. He was a man of action, of few words but of convincing bearing, and his is the first figure to stand out prominently in American naval warfare.

He it was who organized on the spur of the moment the band of untrained volunteers that poured over the decks of the

British Gaspé, stranded in Narragansett bay, and burnt her after capturing her crew. His hand fired the first gun of the Revolution over the water, in the taking of a tender of the Rose. He captained the Columbus, and later the Providence, which took more British prizes than any other American vessel. His last act of importance was bringing to Boston eight ships of the enemy worth a million dollars. Shortly afterward he was taken prisoner and held until the war was over, when he finally settled quietly in Ohio, claiming no reward, but rejoicing that the prime of his life had been spent in successfully defending the principles in which he believed. Such was the first commander of the American navy—a sturdy figure to look back on, a man with a clean record of accomplishment.

From the outset of the war of the Revolution, the United States had to rely almost solely on itself for naval strength. While the French had reinforced the continental army greatly, the naval engagements they undertook for their sister republic did not amount to much. One looks in vain for a French ally upon the ocean as great as was Lafayette on land. The chief hope of the Americans was John Paul Jones, a Scot by birth, more capable as a naval commander than any other of his time. Franklin seems to have been the first American of importance to recognize this. Through his influence Jones, after carrying to a successful issue several less important commissions, was placed in charge of the Bon Homme Richard, an old Indiaman obtained from France, from whose decks the engagement with the Serapis, one of the most brilliant battles in all naval history, was fought. After exchanging several broadsides, the two ships had fouled, and Jones, in spite of the Englishman's efforts to swing clear, succeeded in lashing them together inextricably. The battle was desperate. The Serapis was vastly superior in armament; its crew was trained and disciplined, while that of Jones was motley and unused to his command. In all but one thing the odds lay with the Englishman—Jones had determined inflexibly to win. Caution might have dictated flight; fear of death might have prompted him not to lash the ships together, so that one might survive to pick up the men of the sinking vessel. All thoughts were merged into one—the determination to win. Those who

doubt the power of a single man, of himself alone, to achieve success, should reflect that the seat of the Americans' advantage was the brain of John Paul Jones.

It was inevitable, however, that so small a navy as that of the United States could not long remain intact under the blows of the British men-of-war. At the close of 1779 our regular navy consisted of only six vessels of war, the lowest ebb it had ever reached; but the struggle was maintained, assistance being rendered by privateers and armed merchantmen. Summarized results tell a story better than elaborate description. Of the small continental navy twenty four vessels had been sunk or captured when peace came, while the English loss was one hundred and two men-of-war.

At the close of the war the United States sold all but three of the few remaining ships, and there was much opposition to increasing the navy, till the growing trouble with France made this necessary. Indeed, it is likely that war would have been declared openly had not the young republic again demonstrated its naval strength by the capture of a French frigate by Commodore Truxton in the Constellation and by arming most of the merchant marine.

But when even covert hostilities on the part of France ceased, the American navy did not have a chance to forget how to fight. The depredations of the Barbary pirates called for able men and vigorous action. Preble and Bainbridge commenced a campaign against them which was maintained intermittently until Decatur dealt piracy its death blow in 1815.

But the most admirable chapter of naval history is that which deals with the second war with Great Britain. Comparing the rival forces—men, ships, guns—the result is unsurpassed in naval annals for promptness and efficiency.

At the end of the war but three important engagements had been lost by the United States—one that of the ill-fated Chesapeake, manned by a mutinous crew; the second that of the Essex, after a series of unavoidable misfortunes; the third that of the President, captured after being raked fore and aft by an entire fleet of British frigates, and striking her colors only after disabling one of her enemies. This was the result

achieved in more than a score of battles with a nation deemed invincible since the destruction of the Spanish Armada.

Every American naturally feels proud of the greatness and efficiency of our present navy. Its evolution has been a wonderful thing, and a single modern battleship could doubtless have destroyed the entire navies of the warring powers during the Revolution. Yet one cannot think of the old navy, which meant so much to the United States, without a lingering regret over the picturesqueness which has passed away. The graceful sweep of bellying sails; the deep, broad bows and towering spars; the vessel gliding noiselessly, but for the creak of cordage, over the broad sea—all these are things of the past. Our modern battleships, with ribs of steel and huge armored sides, racked by pounding engines, have little similarity to the ships of Jones or Truxton or Preble. Nor does the dissimilarity between the early navy and that of to-day cease here. The men themselves differed as widely as the vessels they commanded. During the war with Tripoli, Decatur was only twenty four, Perry, Somers and Macdonough were still younger, and Lawrence was only sixteen. Perry, when he won the battle of Lake Erie, was under thirty. The naval training of to-day embraces a course at Annapolis and practice cruises which were unheard of in early days. The man in charge of a modern fleet has grown gray before receiving such an appointment. The evolution of the navy itself has been no more rapid than that of the American naval officer. But the main point remains the same. Of no profession can it be said more truly that efficiency has been its keynote. Beyond this it is unnecessary to go.

THE AMERICAN NAVY.

BY HORACE PORTER.

[Horace Porter, former U. S. ambassador to France since 1897; born Huntington, Pa., April 15, 1837; educated Lawrence Scientific school, Harvard; graduated West Point, 1860; served in field through the Civil war, every commissioned grade up to brigadier general; received Congressional medal of honor for gallantry at Chicamauga; private secretary to president U. S. Grant, 1869–77; since then prominent in business life. Author, Campaigning with Grant, West Point Life, etc.]

My purpose is not to give you the history of the United States navy; that would compel me to carry you through all the incidents included in a record of heroism from Paul Jones to his legitimate successor, George Dewey. I can only speak generally of what the navy has accomplished, its matchless gallantry, and its necessity to the country. In the nation's infancy—that heroic age of the republic, the period of the Revolutionary war,—the country was comprised of colonies which were essentially commercial. There were few manufacturing interests, owing to the severity of the system imposed upon us by the mother country, which discouraged manufacturers in the colonies in order to compel the colonists to buy all their manufactured goods from England. Our coastwise and foreign trade was of first importance to our people, and yet for want of a navy our ports were easily blockaded and our commerce was at the mercy of an antagonist. Such was the spirit of the patriots of that day, however, that they made a bold struggle to win successes at sea. They bought merchant ships and did the best they could to convert them into men-of-war; they hewed the green timber in the forests and constructed naval vessels; they took the bells from the churches and cast them into cannon, leaving voiceless for a time the temple of God in order to make the mistress of the seas feel that even on her favorite element there would be blows to give as well as blows to take. Never was a struggle more unequal. By dint of heroic efforts, however, the merchant marine of the mother country was made to suffer, three of her naval vessels were beaten and captured in her home waters and hostile naval descents made upon her coasts.

These daring operations compelled England to keep many war vessels at home for the protection of her commercial fleets. Vessels which would otherwise have been sent to blockade more effectually our ports effected substantial damage by raising maritime insurance rates and aided largely in making the war unpopular. The carrying into French ports of British men-of-war as prizes did much to convince the French of the formidable character of the Revolutionary struggle, and stimulated that government to take active measures, as our ally, by sending armies and fleets to our aid.

After the Revolution our navy was totally neglected; some ships were sold and others put out of commission. So weak had we become on the water that our old antagonist treated the government with contempt, and was emboldened to demand and exercise the right of search of our vessels under the pretense of looking for British deserters. Insults and humiliation followed rapidly and for years we were told we could not be kicked into a war. At last our vessels were openly fired on and we then accepted the desperate chances of the war of 1812. England had at that time 1,042 vessels—254 of them ships of the line. Her naval armament consisted of 27,000 guns. America had but 17 vessels—none of them battleships—her armament numbered 442 guns. Nevertheless, the gallantry, alertness and superb seamanship of our sailors gained victories which crowned them with laurels and showed even then the importance of a superior personnel.

Our weakness, however, demonstrated the criminal folly of neglecting our sea power. The destruction to our commerce cost vastly more than the maintenance of a competent fleet, and the humiliation suffered on sea and land should be charged up as crimes committed by the government in placing the country at the mercy of even an insignificant power with a respectable navy. This was called the turtle policy. It was like the turtle, only in that it moved slowly, for it did not furnish a shell for protection.

Even after this experience the navy was largely neglected. Then was experienced the most humiliating episode in our history. The Algerian pirates defied us and made us pay

tribute in money and presents to purchase exemption from their attacks on our commerce.

When the ship George Washington carried our tribute to the bey of Algiers, he treated the vessel bearing that illustrious name as the ship of a vassal nation and ordered it to carry his tribute to the sultan of Turkey of whom he was himself a vassal, and made it fly the Algerian flag above the American on the voyage. Finally we were forced to fight the pirate rulers of the Barbary coasts, and our gallant sailors used, with their accustomed skill, the inadequate means placed at their disposal. Still our government did not profit materially from this experience and our navy remained lamentably weak.

In our Civil war, notwithstanding the appalling cost incurred in purchasing and building vessels and improvising a relatively strong navy, we would have been at the mercy of any great power in case of a foreign attack, and we had to submit at times to insulting correspondence and many unreasonable demands from abroad.

The unfortunate experience encountered finally bore fruit, and some twenty years ago our government woke up to the fact that the people demanded naval strength. This action created our new navy, of which all good citizens are justly proud and which acquitted itself so handsomely in the recent war with Spain.

We cannot afford, however, to rest on our laurels while rival nations are steadily increasing their naval armaments. In the constitutional convention, a delegate offered a resolution providing that the American navy should not exceed 3,000 men, when Washington, with a display of ready wit, defeated it by offering an amendment prohibiting any foreign nation from invading the country with an army of more than 3,000 men. It must be remembered that some foreign countries continue to build not only powerful naval vessels but at the same time swift commercial steamers constructed under government supervision and subject to service as auxiliary cruisers in time of war. We must not deceive ourselves as to our relative weakness in this respect. The subject of disarmament by the great powers is actively discussed. Even if it were practical to achieve this much desired end as far as armies are

concerned, it cannot be brought about as regards fleets, for no nation would consent to destroy its warships, and merely disarming them and putting them out of commission would still leave to nations the power to rearm and commission them at short notice.

The entire world is to-day naturally looking to peace. The only question is how to secure it.

It has been fully demonstrated that a strong navy is not a menace but a conservative force. It may be dangerous when wielded by an arbitrary sovereign but never when directed by a sovereign people. It serves the same purpose to the country as the lightning rod to the house. It reaches out, not to attract the lightning, but to meet it when it strikes, disperse its force and stay the ruin it would work.

We have shown that a government may be progressive without being aggressive; that a people may be military without being warlike. We have verified our belief that war should be undertaken only in the interest of peace and that a nation's prosperity depends upon public tranquillity. Those who have been most familiar with the horrors of war are the most earnest advocates of peace. It was the most combative commander on the field of carnage who uttered the famous aphorism "Let us have peace". And but recently it was a man trained in the navy department and having served as a soldier upon the battle field of Cuba, whose patient efforts in advocacy of a cessation of hostilities brought together on the shores of this distant neutral power the envoys of two formidable belligerents whose conferences ended in closing the most appalling struggle of modern times. In this the soldier became the pacificator, the roughrider smoothed the path of peace and taught the world its greatest lesson in diplomacy. And yet it was this same man of peace who said, "A navy is not a provocative of war but the surest guarantee of peace", and who wrote, in touching upon the appropriations in his recent message to congress, "To cut down the navy would be a crime against the nation". One of the reasons why I accepted, on my return home, the presidency of the navy league of America was because there is a useful field for that rapidly increasing organization designed to promote the cause of maintaining a competent navy, to encourage

and aid those who enter that honorable service, and to make the man behind the gun feel that he is honored and not neglected.

Most countries whose merchants have ample protection for their commerce by means of formidable navies owe it to the effective efforts of naval leagues in disseminating knowledge on the subject and explaining its importance. Germany has a navy league consisting of 750,000 members, all working for protection on the sea.

Our navy is now recruiting some of the best material in the world from our great middle west, and we do not have to depend any longer upon enlisting men only upon the seaboard.

The naval training station on Lake Michigan will do much to awaken a deeper interest in our navy, and will aid recruiting in that important region, and will give encouragement to our gallant officers and sailors in showing that our leading citizens are thoughtful of them and appreciate the honorable and arduous career in which they are serving our common country.

UPBUILDING OF THE NAVY.

BY THEODORE ROOSEVELT.

[Theodore Roosevelt, twenty-sixth president of the United States; born Oct. 27, 1858, in New York; was graduated from Harvard in 1880; was a member of the New York state legislature in 1882 and in 1884 was delegate to the National Republican convention; after two years of ranch life in North Dakota he became candidate for mayor of New York in 1886; in 1889 he was National Civil Service commissioner; in 1895 president New York police board; in 1897 assistant secretary of the navy, which post he resigned to organize the Rough Riders, and became lieutenant-colonel and then colonel of the regiment which distinguished itself in Cuba, promoted for his gallant conduct in the engagement at Las Guasimas; in 1899 he became governor of New York, a year later he was elected to the vice presidency of the United States, and in 1901 succeeded to the presidency upon the death of William McKinley; elected president 1904; he has been a distinguished advocate of civic reforms both national and municipal, and a well known author, including studies of his western life where he distinguished himself as a skilled sportsman; author of Winning of the West, History of the Naval War of 1812, Hunting Trips of a Ranchman, Life of Thomas Hart Benton, Life of Gouverneur Morris, Ranch Life and Hunting Trail, History of New York, American Ideals and Other Essays, The Wilderness Hunter, The Rough Riders, Life of Oliver Cromwell, The Strenuous Life, and, as co-author, The Deer Family.]

The work of upbuilding the navy must be steadily continued. No one point of our policy, foreign or domestic, is more important than this to the honor and material welfare, and above all to the peace, of our nation in the future. Whether we desire it or not, we must henceforth recognize that we have international duties no less than international rights. Even if our flag were hauled down in the Philippines and Porto Rico; even if we had decided not to build the Isthmian canal, we should need a thoroughly trained navy of adequate size, or else be prepared definitely and for all time to abandon the idea that our nation is among those whose sons go down to the sea in ships. Unless our commerce is always to be carried in foreign bottoms, we must have war craft to protect it.

Inasmuch, however, as the American people have no thought of abandoning the path upon which they have entered, and especially in view of the fact that the building of the Isthmian canal is one of the matters which the whole people are united in demanding, it is imperative that our navy should be put and kept in the highest state of efficiency, and should be made to answer to our growing needs.

So far from being in any way a provocation to war, an

adequate and highly trained navy is the best guaranty against war, the cheapest and most effective peace insurance. The cost of building and maintaining such a navy represents the very lightest premium for insuring peace which this nation can possibly pay.

Probably no other great nation in the world is so anxious for peace as we are. There is not a single civilized power which has anything whatever to fear from aggressiveness on our part. All we want is peace; and toward this end we wish to be able to secure the same respect for our rights from others which we are eager and anxious to extend to their rights in return, to insure fair treatment to us commercially, and to guarantee the safety of the American people.

Our people intend to abide by the Monroe doctrine, and to insist upon it as the one sure means of securing the peace of the western hemisphere. The navy offers us the only means of making our insistence upon the Monroe doctrine anything but a subject of derision to whatever nation chooses to disregard it.

We desire the peace which comes as of right to the just man armed; not the peace granted on terms of ignominy to the craven and the weakling.

It is not possible to improvise a navy after war breaks out. The ships must be built and the men trained long in advance. Some auxiliary vessels can be turned into makeshifts which will do in default of any better for the minor work, and a proportion of raw men can be mixed with the highly trained, their shortcomings being made good by the skill of their fellows; but the efficient fighting force of the navy when pitted against an equal opponent will be found almost exclusively in the warships that have been regularly built and in the officers and men who through years of faithful performance of sea duty have been trained to handle their formidable but complex and delicate weapons with the highest efficiency. In the late war with Spain the ships that dealt the decisive blows at Manila and Santiago had been launched from two to fourteen years, and they were able to do as they did because the men in the conning towers, the gun turrets, and the engine

rooms had through long years of practice at sea learned how to do their duty.

Our present navy was begun in 1882. At that period our navy consisted of a collection of antiquated wooden ships, already almost as out of place against modern war vessels as the galleys of Alcibiades and Hamilcar—certainly as the ships of Tromp and Blake. Nor at that time did we have men fit to handle a modern man-of-war. Under the wise legislation of the congress and the successful administration of a succession of patriotic secretaries of the navy, belonging to both political parties, the work of upbuilding the navy went on, and ships equal to any in the world of their kind were continually added; and what was even more important, these ships were exercised at sea singly and in squadrons until the men aboard them were able to get the best possible service out of them. The result was seen in the short war with Spain, which was decided with such rapidity because of the infinitely greater preparedness of our navy than of the Spanish navy.

While awarding the fullest honor to the men who actually commanded and manned the ships which destroyed the Spanish sea forces in the Philippines and in Cuba, we must not forget that an equal meed of praise belongs to those without whom neither blow could have been struck. The congressmen who voted years in advance the money to lay down the ships, to build the guns, to buy the armor plate; the department officials and the business men and wage workers who furnished what the congress had authorized; the secretaries of navy who asked for and expended the appropriations; and finally the officers who, in fair weather and foul, on actual sea service, trained and disciplined the crews of the ships when there was no war in sight—all are entitled to a full share in the glory of Manila and Santiago, and the respect accorded by every true American to those who wrought such signal triumph for our country. It was forethought and preparation which secured us the overwhelming triumph of 1898. If we fail to show forethought and preparation now, there may come a time when disaster will befall us instead of triumph; and should this time come, the fault will rest primarily, not upon those whom

the accident of events puts in supreme command at the moment, but upon those who have failed to prepare in advance.

There should be no cessation in the work of completing our navy. So far, ingenuity has been wholly unable to devise a substitute for the great war craft whose hammering guns beat out the mastery of the high seas. But there is something we need even more than additional ships, and this is additional officers and men. To provide battleships and cruisers and then lay them up, with the expectation of leaving them unmanned until they are needed in actual war, would be worse than folly; it would be a crime against the nation.

Even in time of peace a warship should be used until it wears out, for only so can it be kept fit to respond to any emergency. The officers and men alike should be kept as much as possible on blue water, for it is there only they can learn their duties as they should be learned.

Every detail ashore which can be performed by a civilian should be so performed, the officer being kept for his special duty in the sea service. Above all, gunnery practice should be unceasing. It is important to have our navy of adequate size, but it is even more important that ship for ship it should equal in efficiency any navy in the world. This is possible only with highly drilled crews and officers, and this in turn imperatively demands continuous and progressive instruction in target practice, ship handling, squadron tactics, and general discipline. Our ships must be assembled in squadrons actively cruising away from harbors and never long at anchor. The resulting wear upon engines and hulls must be endured; a battleship worn out in long training of officers and men is well paid for by the results, while, on the other hand, no matter in how excellent condition, it is useless if the crew be not expert.

Good ships and good guns are simply good weapons, and the best weapons are useless save in the hands of men who know how to fight with them. The men must be trained and drilled under a thorough and well planned system of progressive instruction, while the recruiting must be carried on with still greater vigor. Every effort must be made to exalt the main function of the officer—the command of men. The

leading graduates of the naval academy should be assigned to the combatant branches, the line and marines.

Many of the essentials of success are already recognized by the general board, which, as the central office of a growing staff, is moving steadily toward a proper war efficiency and a proper efficiency of the whole navy, under the secretary. This general board, by fostering the creation of a general staff, is providing for the official and then the general recognition of our altered conditions as a nation and of the true meaning of a great war fleet, which meaning is, first, the best men, and, second, the best ships.

The naval militia forces are state organizations, and are trained for coast service, and in the event of war they will constitute the inner line of defense. They should receive hearty encouragement from the general government.

The American people must either build and maintain an adequate navy or else make up their minds definitelyto accept a secondary position in international affairs, not merely in political, but in commercial, matters. It has been well said that there is no surer way of courting national disaster than to be opulent, aggressive, and unarmed.

THE NAVY AND ITS FUTURE.

BY WILLIAM HENRY MOODY.

[William Henry Moody, attorney-general and former secretary of the navy; born Newbury, Mass., December 23, 1853; educated at Philips academy, Andover, and Harvard university; lawyer by profession; district attorney for eastern district of Massachusetts 1890–5; member 54th congress from 6th Massachusetts district to fill vacancy; also member of 55th, 56th and 57th congresses; appointed secretary of the navy May 1, 1902.]

The task which is employing the highest energies of the navy, and receiving the greatest attention from the heads of bureaus, the commanders in chief of stations, the commanding and subordinate officers of squadrons, divisions, and single vessels everywhere, is the work of training. To the development of the greatest efficiency in all branches of the service the attention, zeal, and thought of those in charge is mainly directed. This is an era of training. The reports of the several bureaus are largely made up of criticisms upon and plans for the improvement of present systems of practice, drill, and instructions.

The training of apprentice boys and landsmen entering for the first time the enlisted force of the navy in all that is comprehended by the term the sea habit; the training of seamen who have acquired this, but need greater familiarity with the specialized work of a modern ship of war; the training of officers and men of the marine corps in the military and naval duties of that organization; the training of officers and men, sailors and marines in the essential matter of marksmanship with all arms, great and small, including machine and rapid-fire guns, in the care and handling of ordnance, and, particularly, in gun pointing; training in developing and maintaining the efficiency of the main engines of ships, as well as of all auxiliary machinery and devices, steam, electrical, and other; the training of young officers of the staff corps in the specialties of their profession, as well as in its general obligations and duties; the training of junior officers in torpedo work of all kinds, and in the handling of the smaller vessels, and the training of more experienced officers in the capacity to bring

out and utilize the full powers of the vessels under their command, whether operating singly or in squadrons, appears to be the important present business of the navy.

For this purpose schools of instruction have been established wherever practicable, among them being the school for petty officers of the seaman branch at Newport, and for the artificer branch at the navy yards, Portsmouth, Va., and New York; the school at the medical museum, and the torpedo school at Newport. At the same time the work of the naval war college has received increased attention.

It is needless to say that the purpose of all this instruction and training is to make the navy fit for its ultimate design as an instrument of warfare. The navy serves many useful purposes in times of peace which should by no means be minimized. Nevertheless it would not exist in anything like its present form if the possibility of war were not in contemplation. It is believed to be the duty of the department to employ the means which congress has placed at its disposal to develop every latent power of material and personnel and see that all branches of the service operate in intelligent harmony. This constitutes that preparedness for war which is the best guaranty of the continuance of peace. It has been remembered at every step that the people desire peace and not war, and that the navy should be potent that peace may be preserved. This preparedness for war should be complete; a partial or half-way preparation will not insure us against attack, may even invite it.

Among the most important lessons learned in the war with Spain was that a modern navy can not be improvised during a war or upon the threshold of a war. Much money was then expended in the purchase of ships. Many of them served useful auxiliary purposes, but it may well be doubted whether they added materially to the fighting efficiency of our fleet. The time best suited to the development and perfection of our navy is the time when there is neither war nor threat of war. Happily the present is such a time, and it permits a dispassionate consideration of the future.

The country approves, with hardly a dissenting voice, the policy of strengthening our power upon the sea. What

would have been an adequate navy some years ago is totally inadequate for the performance of the duties growing out of our new possessions in the Pacific and Atlantic and the determination of congress to construct a canal across the Isthmus.

If, then, the policy of strengthening our power upon the sea to the point where it can respond to the national needs be not abandoned, the navy has manifold needs. There must be additional naval and coaling stations; more ships, fighting and auxiliary; and an increase of officers and men. In all of these respects, congress in the past has dealt with the navy wisely and generously, and I doubt not that in the future it will as accurately register the will of the people.

TWENTIETH CENTURY IDEAS ABOARD OUR FIGHTING SHIPS.

BY I. V. LEE.

I. V. Lee, naval expert, is a New York literary man who has devoted much of his time to the study of naval problems; at first a hobby with him, he has gained such a thorough knowledge of the naval equipments of the United States and other nations, that he has become a recognized expert, and articles on these subjects from his pen are in demand by the leading periodicals and newspapers; Mr. Lee has inspected personally most of the ships of the United States navy.]

Fighting ships, more ships, finer ships! Such is the supreme demand of the nations. Money beyond computation is being poured into the huge floating forts which the world powers are launching. Brains, blood, and all that inventive genius or patriotism can command are being spent to build and to improve these great fighting machines called warships.

Increasingly complicated in its machinery, ever growing in cost, calling constantly for more speed, greater destructiveness, and greater safety—the naval engineer is almost bewildered by the problems which confront him when he is called upon to design a new ship. The admiralty departments of the nations, despairing of keeping their old ships in the best fighting trim, are putting their best efforts into new ships, allowing the old ones to shift for themselves. Russia, in the face of the destruction of her Port Arthur fleet, announced that $800,000,000 would be spent in the next few years on her navy. Great Britain, although possessing the largest navy in the world, yet announced not long since that her admiralty was designing a battleship of 17,000 to 18,000 tons, with ten 12-inch guns in its main batteries, capable of firing a broadside of seven 850-pound shells able to perforate two feet of the best existing armor—in other words, a ship that would have no trouble in destroying anything now afloat or yet designed.

Into this strenuous race for naval supremacy the United States has entered with all her militant Americanism. It is said that her navy department is even planning a battleship of 20,000 tons displacement. The president calls for an American navy which shall be not necessarliy the largest, but as an or-

ganized unit the most effective on all the seas. In American shipyards there are now in process of construction thirteen first class battleships, eight armored cruisers, and seven protected cruisers—the greatest aggregate fighting power now being added to the navy of any one of the great powers.

The United States has been building modern types of cruisers since 1883, battleships since 1890. Consequently her navy has not had much time to grow out of date, yet the new ships embody a great number of important improvements over their predecessors.

Among these developments none is more important than the means of insuring the safety of the ship in case of collision, grounding, explosion, or other disaster resulting in puncture of the hull. The system devised to render the new ships of the navy almost unsinkable consists, so far as a visitor to the bridge can see, of two dials with a hole in the center of each and borders of small disks around the edge. These are the central emergency stations, each controlling fifteen bulkhead doors and hatch gears below the protected deck. Each of the disks is numbered to correspond to a door or hatchway in some vital part of the ship.

But this is not, of course, the important part of the system It is merely the controller. On all the main bulkhead openings are electric motors connected with the station by conductor wires. Now suppose that the Colorado is rammed by a careless or hostile navigator. The man who is nearest this emergency station pulls a latch similar to a fire alarm box. Instantly the doors are set in motion in rapid succession, within less than two minutes every door is brought into its water tight groove, and immediate danger of sinking is averted.

If there is trouble at any door it will show in the corresponding disk of the station. If a sailor or seaman has been imprisoned in a compartment he has only to raise a lever, the door will move back and allow him time to pass through, and then close again automatically. This long arm control of the bulkhead doors, combining as it does, distant and local control, assures the safety of the ship and the safety of its crew, leaving nothing to chance or individual initative, bravery, or effi-

ciency. A man in a place of safety above deck presses a button and machinery does the rest.

The use of electricity in providing all the necessities of the ship is developing to an astonishing degree. Thirty miles of copper wire are required to convey the current from dynamos to motors to the working devices. Electricity now hoists the great shells from ammunition rooms to gun turrets at the rate of 200 feet a minute. The same power moves the tremendous guns into place and an electric button discharges the deadly broadside.

Electricity competes with the steam and fire in the hold of the ship, serving as motive power for ventilating fans in great number. When it is realized that the temperature below deck often rises to 300 degrees Fahrenheit, it may be seen how important are the fans to the health of the men. Electricity likewise operates the ship's laundry machinery, it turns the deck winches, it illuminates the vessel throughout, and it will soon control the steering gear—one of the few important parts of the ship's equipment which has not yet surrendered to the twentieth century plan.

Men-of-war now have telegraph systems of their own aside from the wireless apparatus with which they are equipped. Repeating telegraphs are fitted for the propelling engines, with dials on the working platforms, and connected to transmitters located in the conning towers and on the flying bridges whereby the number of engine revolutions desired can be readily transmitted. Other devices make it possible for the engineers to operate the engines in unison and at the same time display the direction of rotation to the navigating officers. There are likewise complete fire extinguishing and automatic flooding apparatus.

At the present time most of the communication between different parts of the ship is by speaking tubes. This system has itself been developed to a remarkable degree. The captain, from his station, is now able to communicate with the engine and dynamo rooms, the torpedo directing stations, lookout platforms, wireless telegraph rooms, and central stations. There is an elaborate system of intercommunication between all the various parts of the ship. So large is the num-

ber of these speaking tubes on a modern battleship that if placed side by side with one inch space between them they would occupy a width of sixty feet. It is planned, now, however, to establish a telephone central directly under the conning tower with a switchboard for connecting any one part of the ship with another. The wires for the entire system could be placed inside any one of the speaking tubes now used.

Another improvement of great value in reducing the complications in the ship's mechanism and construction is the proposed drainage system recommended by George W. Dickie, the San Francisco shipbuilder. Under the present system of drainage 4,000 feet of pipe, which make it necessary to keep water tight more than a thousand joints, will be done away with, and in its place will be only 200 feet of pipe and sixteen valves.

But it is not alone in the matter of minor machinery and devices that there is a rush for improvements, but the very propelling engines of the ship are being continually studied in the effort to make their material of less weight and their driving power of greater force. The human mind does not easily grasp the meaning of the power concentrated in a ship like the Colorado. Its engines generate an energy that equals the united power of 250,000 men. Installed in a locomotive engine, it could draw 1,200 railway cars at the rate of thirty miles an hour. Twelve hundred railway cars would stretch over six miles, and would carry an army of 36,000 men. But still the call is ever for more power, and the turbine engine is now depended upon by many to meet this demand. When the bids for the cruisers Montana and North Carolina were opened at the navy department on Dec. 17, 1904, it was found that the Fore River Shipbuilding company had offered to build the two cruisers with turbine propulsion machinery for $4,244,000 each. This is the first time that it had ever been seriously proposed by a shipbuilder of great reputation like ex-chief constructor Francis T. Bowles, now president of the Fore River company, to place turbine machinery in a 14,000 ton cruiser. The price was a high one and the naval authorities were not disposed to make an experiment with turbines on such a large scale. But there is no doubt that this is the

next epoch making development to be looked for in the direction of greater power for warships.

New kinds of guns, new gun mountings, new range finding devices, new means of protecting guns, are being constantly developed. Great changes in the emplacement of guns are likely to be made necessary by the experience obtained in the Russo-Japanese war. In the great sea fight in the Sea of Japan it was shown that an effective battle could be fought at 6,000 yards' distance, and naval experts in consequence are talking of the necessity of changing the present arrangement of a ship's batteries so that they will consist mainly of the largest possible number of elevated heavy guns and a battery of rapid-firers for defense against torpedo boats. When this change comes about it will put six and eight inch guns out of business altogether.

A minor improvement, but one that will avert such another disaster as occurred on the battleship Missouri, is an invention of two naval officers to prevent flarebacks. The plan consists of drilling small holes about the size of a lead pencil through the breech of the rifle and entering the barrel just ahead of the breech plug. These holes are connected with a pipe that encircles the end of the weapon. Compressed air is supplied through this pipe, and as the breech block is withdrawn after a discharge a powerful current is forced through the three holes slanting toward the muzzle, and everything that remains in the barrel of the gun is forcibly ejected—gases, flames, remnants of powder bags, or anything that might ignite the next charge placed in the gun.

Improvement in armor has of necessity kept pace with improvement in guns. First there was the Harvey, then the Krupp process, and now a new armor making process has come into the field—the Midvale company, which operates under American patents independent of the Krupp methods. Strangely enough, the price of armor plate is steadily going down, in spite of the improvement. Before the Krupp armor process was discovered the American government paid a uniform price of $545 a ton. Since 1899, when Krupp's method was adopted, the price has been $420, with $22 per ton additional for the patent royalty. The next drop in price came last year,

when the Midvale company bid $398 a ton and got a 6,000 ton contract. Tests made with an eight inch gun against an eight inch side armor plate showed that the Midvale product was quite as good as the Krupp plates.

The United States government uses about 16,000 tons of armor annually, the saving on which at the Midvale prices would be in the neighborhood of $700,000. If, as now appears most probable, the Midvale company makes good both as to quality and deliveries, there is no doubt that rival armor makers will have to meet this company's prices, for it will have every incentive to increase its facilities to such an extent that it can produce all the armor required by the government.

The result of all the improvements designed to make the ship safer and to increase its fighting efficiency is a great increase in cost, notwithstanding the fact that the number and facilities of our shipyards are constantly increasing, and that the great number of labor saving appliances they employ almost neutralizes the difference in the cost of labor here and abroad. This difference is considerable. A warship of 12,500 tons costs Great Britain $4,272,500; France, $5,390,000; Germany, $5,194,250; Italy, $4,860,000. The same ship would cost not less than $5,500,000 in the United States, and it might cost a good deal more.

But one of the most deceptive things in the world is the price of a warship. The bid price of the battleship New Hampshire, for example, let to the New York Shipbuilding company, is only $3,748,000; the completed ship will cost the government about $8,000,000, armor and armament representing the difference between the two figures. Thus while the final cost of our warships is steadily increasing, the cost a ton of the hulls is just as steadily decreasing, and comparative figures on this point have considerable interest at this time.

It would not be worth while to go back of 1901 for the purpose of drawing such a comparison, because that would be dealing with different types of construction. The armored cruiser Pennsylvania, whose keel was laid in the year named, cost $286 a ton, and the South Dakota, the contract for which was let in 1902, cost about the same. In 1903 the cost per ton of the same class of ship, the Tennessee, had fallen to $278.

The Colorado, of 13,680 tons displacement, just now completed, cost $3,780,000, or almost $280 per ton. A considerable drop shows in the bid price for the cruisers Montana and North Carolina. The building of these ships, each to be of 14,500 tons, was awarded to the Newport News Shipbuilding company for $3,575,000 each. The Tennessee, of the same class and tonnage, cost the government $4,035,000—a ton cost of $278 as compared with $247.

Over $100,000,000 is a lot of money to spend annually on the navy; it would be more than reason could justify if all of this sum was expended on naval increase. As a matter of fact, however, hardly a third of the amount asked of congress for the navy is wanted for new ships. Estimating the amount to be appropriated at $104,000,000, it will be divided about like this: $60,000,000 for pay, coal, repairs, and maintenance of ships, yards, and docks; $30,000,000 for increase of the navy, and $14,000,000 for armor and armament.

Ex-Secretary Morton expressed the popular conception of the kind of naval establishment the public wants when he said "I am in favor of a navy so efficient that no other nation in the world will want an engagement with it. It is not necessary that we should have the biggest navy that floats. It is necessary that our navy should be the most efficient."

THE NEW NAVY: ITS GROWTH AND ITS HISTORY.

BY FREDERIC ROYCE.

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The United States ranks third among the great powers of the earth. From a position at the foot of the list of naval powers in 1883 the republic, in a quarter of a century, has passed all her rivals save two. To-day the American navy dominates the Atlantic and Pacific shores of its western hemisphere. It is so strong that none of the European powers save England dare question the virility of the Monroe doctrine. It is so strong that none of the commercial rivals of the United States care to dispute our interests in the Pacific or in the far east.

The story of the building of the new American navy begins in 1883, when congress authorized the construction of the first modern steel ships, armed with modern guns and protected by modern armor. Previous to that year the navy was made up of a few monitors, several iron cruisers of small tonnage, and a few modern vessels. None of them embodied any of the features of modern naval construction. The United States, first to fight and win naval battles with ironclad ships and with guns mounted in revolving turrets, was the last to adopt them in the construction of a permanent navy. The battle between the Merrimac and the Monitor in Hampden roads on March 9, 1862 revolutionized naval warfare and made all the navies of the world fit only for the junk yards. But the United States was the last of the nations of the earth to profit by the lesson she had taught her rivals.

It may be said, however, that at the close of the Civil war there were many weighty reasons why the United States was unable and unwilling to devote its energies to the construction of a navy. The necessity for a powerful navy did not exist.

There were clouds upon the international horizon at times during the Civil war, but they passed away when that conflict ended and the United States was at peace with all the world, with no disputes with foreign powers serious enough to call for more than the exercise of diplomacy. Again the resources of the nation were exhausted. The national treasury faced a war debt of $2,000,000,000 in round numbers. Congress was compelled to set itself to the task of financing this enormous undebtedness, of finding, the money for the rehabilitation of a country wrecked by the ruin of a four years' war. Our commerce had been swept from the seas and we had no merchant ships to protect in foreign waters. There were no apparent reasons in the years between 1865 and 1883 why the United States should build or even maintain a strong navy.

The American navy in these years immediately following the Civil war consisted of nine monitors, three ironclad cruisers of small tonnage, six modern warships of the type made famous during the war of 1812 but propelled by steam power, and a few sailing vessels. Of the nine armorclad monitors, five, the Canonicus, Jason, Lehigh Montauk and Nahant, were built during the Civil war, their keels being laid in 1862. The Canonicus had a displacement of 2,100 tons and the other four, of 1,875 tons. They were not built for cruising and their engines developed only 340 horse power and enabled them to steam from 5 to 6 knots an hour. Each was armed with two 15-inch smooth bore guns, mounted in a single turret. They were unwieldy vessels, unseaworthy, and practically useless except for harbor defense against vessels of lighter construction and less powerful guns. Yet at the time they were constructed they represented the highest type of naval construction and embodied all the modern ideas of up to date architecture. They served the purpose for which they were built, and it is worthy of note that at the beginning of the war with Spain in 1898, the five old monitors were dragged from the obscurity of their long retirement, supplied with new boilers, their engines overhauled, and officered and manned they took their places among the warships assembled to protect the cities of the New England coast from the ravages of the Spanish fleets that were supposed to be lurking everywhere in the Atlantic,

from the bleak wilds of Newfoundland to the sunny shores of Jekyl island.

For a number of years after the close of the Civil war congress clung to the tradition of the Monitor's victory of the Merrimac, and the few plans for additions to the navy refused to depart from the monitor type. In 1874 congress authorized the addition of three monitors to the navy—the Terror, the Amphitrite and the Miantonomah. They represented a great advance over the crude type of the Monitor of 1862. In displacement they recorded 3,990 tons. Their engines were capable of 1,600 horse power, and they were planned to develop a speed of 10.5 knots an hour. In armament, too, they were vastly superior to the original monitors. Instead of one revolving turret each was supplied with two, with a pair of 10-inch breech loading rifled guns in each turret. Each was supplied with a secondary battery of two 6-pounder rapid fire guns, and 9 rapid firing guns of smaller caliber. They were also designed as cruising ships, and indeed, all three took an active part in the naval operations of the Spanish-American war, participating in the blockade of the Cuban coast and two of them accompaning Rear Admiral Sampson's fleet in his first attack on the port of San Juan, Porto Rico. But the futility of the monitor as a cruising ship was forever settled in that one expedition. Their low rate of speed only retarded the movements of the rest of the fleet, and Rear Admiral Sampson was compelled to tow them with his faster cruisers. Still, they served a useful purpose in the blockade of Havana, the Terror even signalizing itself by running down and capturing at least one Spanish prize. Their service to the nation ended with the Spanish-American war, however, and they have long since been consigned to that haven of derelicts, the junk heap.

But in 1875 congress had not yet looked far enough in the future to discern the inevitable doom of the monitor type, for in that year the construction of a still larger monitor, the Puritan, was authorized. The Puritan was given a displacement of 6,060 tons, with engines of 3,700 horsepower and a speed of 12.4 knots. She was armed with four 12-inch breech loading rifled guns, mounted in pairs in two turrets, with a secondary battery of six 4-inch guns, six 6 pounders and 11 rapid fire guns

of smaller caliber. The Puritan represented the highest development of the monitor type of warship ever constructed. It was heavily protected with steel armor and its low freeboard made it almost an impossible target. As a vessel for coast and harbor defense pure and simple it possessed capabilities of enormous value. The Puritan is still a unit in America's naval strength, and as she is practically a floating fortress armed with heavy modern guns, doubtless she would prove her value, should her services ever be required in time of actual war.

The construction of the powerful monitor Puritan was the turning point in the history of the American navy. The best naval authorities were beginning to see the necessity of a warship that would not be compelled to cling close to the coast in time of war. A feeling was gradually growing that the honor and prestige of the United States demanded the construction of a modern type of cruising warship, able to carry the flag to foreign ports where its identity was unknown. The sentiment was of slow growth, but sure. It was not until 1883, when William E Chandler of New Hampshire was secretary of the navy in President Arthur's cabinet, that congress could be induced to take the first steps in the construction of a modern navy.

The beginning was a modest one. American naval authorities had watched the progress of warship building in England and France. They had studied the problems as they had been worked out by British and French designers. Many of the foreign ideas in naval construction they rejected, others they accepted and improved. Consequently, the first modern warships built for the navy represented a distinct advanced American type.

The forty seventh congress in a bill approved by President Arthur on March 3, 1883, provided for the construction of three protected cruisers and a dispatch boat. Under this authorization the navy department built the Atlanta, the Boston, the Chicago, and the dispatch boat Dolphin. They were the first cruisers of the new navy, the forerunners of a long line of fighting vessels which to-day are the pride of the American people and the admiration of the naval powers of the world. Of these three pioneer cruisers the Chicago was the largest,

having a displacement of 3,000 tons and a speed of 15.5 knots. The armament consisted of four 8-inch guns and fourteen 5-inch guns, besides a secondary battery of fourteen smaller guns. The Chicago was a steel cruiser, the first of its type ever built in the United States and had a steel protected deck of $1\frac{1}{2}$ inches. The guns were protected by shields of 4-inch steel armor. Although the Chicago's original cost was $889,000, the cruiser, which is still in commission, has practically been rebuilt. She has been supplied with entire new armament and is to-day one of the best of her class afloat. For the greater part of the time since she has been in commission the Chicago has been in service as the flagship of the south Atlantic squadron. The Atlanta and Boston were protected cruisers of 3,000 tons displacement. The Dolphin was designed as a dispatch boat and until after the Spanish-American war was used as the president's yacht. All four of the vessels authorized by congress in 1883 are still in active service, as cruising ships. The Boston took an important part in the battle of Manila bay, on May 1, 1898.

The forty eighth congress in 1885 authorized the construction of two protected cruisers, the Charleston and the Newark, and of two gunboats, the Petrel and the Yorktown. The Newark had a displacement of 4,098 tons and the Charleston, 3,370. The Charleston remained in active service until 1899. It was the Charleston that was hurried to Manila to replenish the ammunition magazines of Dewey's ships after the destruction of the Spanish fleet. On the way to the Philippines the Charleston stopped long enough to capture the island of Guam, now held as an American naval and cable station in the Pacific. The Newark took part in the blockade of the Cuban coast during the war with Spain in 1898, and after the destruction of Cervera's fleet, was selected by Rear Admiral Watson as the flagship of the fleet ordered to proceed to the coast of Spain. The signing of the peace protocol, however, made the voyage unnecessary. The Petrel performed valiant service in the battle of Manila bay. After Dewey had destroyed the Spanish ships he sent the Petrel alone into Cavite bay to destroy Spanish shipping and a few of the smaller warships which had sought refuge within the inner harbor. The Petrel did the work successfully, not only destroying the Spanish ships, but

the shore batteries and capturing the Spanish naval yards, depots and supplies. The six cruisers and two gunboats added to the navy by congress in 1883 and 1885, aroused popular enthusiasm for the new navy to a degree not known since the days of the Civil war. The new cruisers formed what soon became to be popularly known as the white squadron. Several of the new cruisers visited European ports where they received notable receptions from naval authorities and the public. The American people began to not only show interest in the navy but to take pride in it, and public sentiment was ready to support congress in making further additions to it. Under these circumstances, congress was ready to vote the money for more ships, and the session of 1886 authorized a marked increase in the strength of the navy.

Up to 1886 there had been considerable discussion as to the necessity for battleships in the navy. The modern battleship was regarded more as an experiment and congress hesitated to authorize the expenditure of so large a sum for a single ship the value of which had yet to be demonstrated. William C. Whitney had accepted a position in President Cleveland's first cabinet as secretary of the navy and he brought his powerful influence to bear in favor of the battleship. Congress, therefore, in 1886 authorized the construction of no less than nine new warships, including two battleships, the Maine and the Texas, four monitors, the Amphitrite, Monadnock, Puritan and Terror, one protected cruiser, the Baltimore, one dynamite gun cruiser, the Vesuvius, and one torpedo boat, the Cushing. The program thus authorized was a notable one in the history of the new navy. Congress clung to the tradition of the monitor, reasoning that any war in which the United States became involved would necessarily be one solely of defense, and that instead of building ships to strike the enemy at a distance, the United States need only build ships capable of defending the coasts and harbors at home. It was a popular argument and was pressed with considerable force. In fact a majority of the American people believed it; and yet only twelve years later the United States was engaged in war and sent its fleets to fight and win battles half way around the globe.

But, if congress had not yet reached the point where it

was willing to give up the monitor, it made a large concession to new ideas in providing two battleships and a torpedo boat. The torpedo boat was a new development of naval science. It had its origin abroad and England and France were building large numbers of them. The fact that their utility had never been demonstrated except in theory deterred congress from embarking too rashly, and therefore only one torpedo boat was provided, more as an experiment than anything else. Another radical departure was the dynamite gun cruiser, the Vesuvius. The Vesuvius was distinctly an American idea. The cruiser, instead of carrying the usual armament of rifled guns of large caliber, was equipped with two tubes extending from the hold of the vessel through the decks and directed at an angle of 45 degrees to the stern of the boat. The shells, loaded heavily with dynamite, were fired through the tubes with compressed air. Much was hoped for of the Vesuvius, but after she was placed in commission she proved a disappointment to her designers. During the Spanish-American war the Vesuvius was placed in commission and sent to assist in the blockade of Cervera's fleet in the harbor of Santago. Here, therefore was an opportunity to test the value of the dynamite gun under the most favorable circumstances in real war. The tests were made but were not satisfactory. The Vesuvius threw a number of dynamite shells over the hills into the city of Santiago, doing some damage, but not more than would have been done by an ordinary shell from a heavy gun. There were too many disadvantages to be overcome. The dynamite guns could be fired only when the cruiser was in one position. The guns, or rather tubes, were immovably fixed and could not be aimed at the target. They could scarcely be used at all except in smooth water. The experiments at Santiago ended the career of the Vesuvius.

The two battleships provided in the naval program of 1886 were the Maine and the Texas, both rated as second class because of their comparatively small tonnage. The Maine had a displacement of 6,682 tons, but carried a heavy armament and full armor protection. She embodied all the best ideas of modern battleship construction and was built from designs prepared by American naval officers. The Texas,

also rated as second class, had a displacement of 6,315 tons and was built from plans purchased in England. Both of these battleships, the pioneers of the great fighting vessels of the present American battleship fleets, were destined to play an important part in the Spanish-American war. Relations between the United States and Spain were rapidly becoming strained in the winter of 1897-8 over the Cuban insurrection. The sympathies of the entire American people were with the Cubans in their struggle for freedom from Spanish domination. Their sympathy was accomplished by material aid, for filibustering expeditions were constantly being fitted out in the United States. Spain accused the United States of conniving at the aid secretly given, and the feeling against Americans in Havana became exceedingly bitter. Finally in January, 1898, riotous demonstrations against Americans in Havana demanded the presence of a United States warship for their protection. President McKinley sent the battleship Maine from Key West. The Maine was received by the Spanish authorities with all the official courtesies due and the riotous demonstrations in Havana ceased. On the night of Feb. 15, 1898, the Maine was destroyed by an explosion in Havana harbor. The American people in a sudden flame of anger attributed the destruction of the vessel and the death of 386 men of her crew, to Spanish conspirators. Spain herself assumed arrogantly that the Maine was destroyed by the carelessness of her own men. The destruction of the battleship was not the cause of the war between the United States and Spain; but beyond question it hastened it.

The Texas for years after it had been placed in commission, was regarded as the lame duckling of the navy. American naval officers had never forgotten the fact that the ship had been built from designs supplied by British officers. Indeed, the Texas seemed to be defective in construction. Once it sank at its dock without warning. It was declared to be unseaworthy and incapable of cruising any distance from its dock. And yet, in the blockade of Cuba the Texas took its place with larger and more seaworthy vessels and in the battle of Santiago actually outstripped many of the American ships in speed and was one of the three vessels able to join in the pursuit of the

Cristobal Colon. The Texas in the one battle redeemed her reputation and is now regarded as one of the serviceable ships of the fleet.

Of the other vessels authorized in 1886, the Baltimore ,a protected cruiser of 4,413 tons displacement, has figured prominently in recent American history. In 1892 while the Baltimore was at the Chilean port of Valparaiso the crew sent ashore on leave was attacked by a mob and two of the American sailors killed. Capt. Winfield Scott Schley was in command. He immediately trained the guns of the Baltimore on the city and demanded the arrest and punishment of the murderers. The incident nearly precipitated war between the United States and Chile, but the South American republic finally made ample apology and reparation. The Baltimore took part in the battle of Manila bay, leading the squadron in the second attack on the Spanish ships. The monitor Monadnock although designed solely for coast defense, was sent to Manila soon after Dewey's victory, accompanied by the monitor Monterey in order that their heavy guns might strengthen the American naval force.

Congress, in 1887, added six more vessels to the new navy, including two protected cruisers, the Philadelphia and the San Francisco, the monitors Miantonomah and Monterey and the gunboats Bennington and Concord. The policy of adding protected cruisers to the navy was justly deemed a wise one. There was need of ships of a modern type for cruising along the South American coasts, through the West Indies and even in European waters, and the navy was deficient in this class of vessels. The gunboats, too, were needed in rivers and small ports where the water was too shallow for vessels of greater draught.

American naval policy was further enlarged by congress in 1887 when two new types of war vessels were provided for. The naval program of that year included the armored cruiser New York, the first of its class ever built by the United States and the forerunner of the magnificent armored cruisers now the pride of the navy. The New York, in fact, was practically a second class battleship of 8,200 tons. She was larger than either the Maine or the Texas, then the only ships of the

battleship class in the navy. She carried eight 8-inch guns, twelve 5-inch guns, and a powerful secondary battery of twenty three rapid fire guns of smaller caliber. The New York was Rear Admiral Sampson's flagship during the Spanish-American war, and took part in the blockade of Havana, the bombardment of Matanzas and San Juan, and the blockade of Cervera's fleet in Santiago harbor. It was the misfortune of Rear Admiral Sampson and the New York, to be ten miles away from the mouth of the harbor on the morning of July 3 when Cervera's fleet emerged from the harbor to its certain destruction. The New York arrived in time to participate in some of the fighting, but the bulk of the Spanish fleet had been destroyed before Rear Admiral Sampson arrived.

With the New York, congress in 1887 authorized the construction of three unprotected cruisers, the Detroit, the Marblehead and the Montgomery. They were given a displacement of 2,089 tons and were designed for cruising in foreign waters and to show the flag in foreign ports. The same program included the two famous protected cruisers, the Olympia and the Raleigh, both of which took part in the battle of Manila bay, the Olympia being Admiral Dewey's flagship. The protected cruiser Cincinnati and the gunboat Bennington were also added to the navy by the vote of 1887.

The naval increase provided by congress in 1889 was modest in the extreme. A second dynamite gun cruiser of the Vesuvius type was authorized but never built. Two gunboats, the Castine and the Machias, were authorized. Then congress tried another experiment. It authorized the navy department to construct a new type of warship to be known as a ram. The Katahdin was the result. The vessel cost upwards of $1,000,000 and has been useless. The Katahdin is simply a cruiser with an enormous steel prow and the idea of its designer was that in battle it would force its way into the thick of the combat and ram the vessels of the enemy, depending on its speed and the thickness of its armor, rather than upon its guns for protection. The value of the Katahdin is now regarded by naval men as practically nil. Conditions of modern naval warfare have changed and sea battles are fought at ranges of 2,000 to 6,000 yards, the destructiveness of gunfire proving as

formidable at long ranges as at the close quarters that prevailed in the combats even of the Civil war.

In 1890 congress added three more battleships to the navy—the Indiana, the Massachusetts and the Oregon. The protected cruiser Columbia which afterwards startled all the European naval powers by its voyage across the Atlantic in ocean greyhound time, was designed especially as a commerce destroyer in time of war. It had a speed of 22.6 knots, was not armored and had a strong armament of one 8-inch and two 6-inch breech loading rifles and eight 4-inch rapid fire guns —an armament sufficiently heavy to destroy the largest merchant liner afloat at long range, but not of especial service in a combat with a warship. The Columbia was not designed as a fighting ship, however, but as a commerce destroyer, and in time of war doubtless would prove its value.

The Indiana, Massachusetts and the Oregon were the first battleships rated as firstclass built for the American navy —the Maine and Texas authorized in 1886 being rated as only second class. The three were sister ships, each having a displacement of 10,288 tons, and each carrying four 13-inch guns, eight 8-inch guns and four 6-inch guns in their main batteries. The Oregon was built on the Pacific coast, in pursuance of a policy adopted by congress in 1888, of having a part of the new ships for the navy constructed on the west coast. The Indiana and Massachusetts played important parts in the naval operations in Cuban waters during the war with Spain in 1898. The Oregon earned worldwide fame by its remarkable cruise of 10,800 miles, from San Francisco to Jupiter Inlet, Florida, around Cape Horn. It was the most notable voyage ever undertaken by a battleship of its class in the history of modern navies. Leaving San Francisco on March 19, 1897, the Oregon, after a record breaking run, arrived at Jupiter Inlet on May 24, with engines and boilers in such perfect condition that after hurriedly refilling her coal bunkers the huge battleship sailed on May 25 for the coast of Cuba to take her position in the blockading fleet. Capt. E. C. Clark—afterwards Rear Admiral—was in command of the Oregon on its sensational voyage. During the last two weeks of the Oregon's voyage, there was intense anxiety for its safety. It was known

that Admiral Cervera with the squadron of armored cruisers which afterwards was destroyed at Santiago, had sailed from Cape Verde for American waters, on April 29. It was feared that Cervera's purpose was to intercept and attack the Oregon. His five, supposedly swift, heavily gunned armored cruisers made up so formidable a squadron that naval experts abroad believed that the Oregon would have been destroyed had it fallen in with the Spanish ships. The fears for the safety of the Oregon were groundless. Cervera's plans did not contemplate an attack on the Oregon but Capt. Clark, who was expecting an attack, was prepared for it. His declaration cabled to the navy department from Rio Janeiro, "I'm not afraid of the entire Spanish fleet," has passed into the traditions of the American navy as one of its favorite epigrams. Indeed, subsequent events proved that the Oregon alone would have been more than a match for Cervera's entire squadron, for the battle of Santiago demonstrated that the Spanish ships were slow, and unprovided with ammunition and that officers and men were incapable of even putting up a fight. In the battle of Santiago the Oregon, with a trial speed of only 16.79 knots, developed nearly 18 knots and easily overhauled the Cristobal Colon, a cruiser whose English built engines and boilers were designed to send her through the water at a 22 knot speed. After the close of the Spanish war the Oregon made another remarkable voyage, sailing from the Norfolk navy yards around Cape Horn and across the Pacific to reinforce Dewey's fleet at Manila.

In 1891 congress provided but for one addition to the navy—the protected cruiser Minneapolis—a sister ship of the commerce destroyer Columbia. In 1893 however congress added the armored cruiser Brooklyn and the firstclass battleship Iowa to the navy. Both ships represented a distinct advance in naval construction. The Brooklyn was larger and more heavily armed than the New York, the only armored cruiser in the navy at that time, while the Iowa had a displacement of 11,340 tons as against the 10,288 tons of the Indiana, Massachusetts, and Oregon. Both ships rendered valuable service in the Spanish-American war. The Brooklyn was the flagship of Rear Admiral Schley, second in command at the battle of Santiago, and was hit oftener by Spanish shells than

any other American vessel in the engagement. The Iowa took part in the same battle.

Three gunboats, the Helena, Nashville and Wilmington, and a submarine torpedo boat, the Plunger, were authorized by congress in 1893. The Nashville fired the first hostile shot in the war with Spain, capturing the Spanish ship Bonaventura on the morning of April 22, 1898, only a few hours after war was declared and while Sampson's fleet was on its way from Key West to begin the blockade of Havana. The year 1894 was not friendly to naval expansion. Congress authorized only the construction of three torpedo boats, the Foote, Rodgers and Winslow. The Winslow won distinction in the Spanish-American war in the action at Cardenas on May 11, 1898. The Winslow had entered the bay to assist in cable cutting operations and came under range of the Spanish shore batteries. Ensign Worth Bagley and four sailors were killed, this being the first American blood shed by the Spaniards in the war.

The congress of 1895 made a notable increase in the navy, providing for the construction of no less than eleven vessels, including two firstclass battleships, six gunboats and three torpedo boats. The battleships were the sister ships Kentucky and Kearsarge and offered a radical departure from any type of battleship ever before constructed in any navy. Both were supplied with superimposed turrets—a pair of 13-inch guns in the lower turret and a pair of 8-inch guns in a smaller turret mounted upon the larger turret. The departure attracted widespread attention in worldwide naval circles and came in for no little criticism. The criticism, however, seems to have been unwarranted, as the superimposed turrets have worked satisfactorily and the men in either turret seem to experience no discomfort when the guns in the other are fired. Still there has been no opportunity to test the superimposed turret in actual warfare. The advantages that may have been gained by the double turret do not seem to impress the American naval authorities as compensating for some disadvantages. Therefore the superimposed turret has been regarded as an experiment and has not been repeated in any battleship designed since the construction of the Kentucky and the Kearsarge. The gunboats provided in the same naval program

were the Annapolis, Marietta, Newport, Princeton, Vicksburg and Wheeling. They are all small cruising vessels, each of 1,000 tons displacement, built for West Indian and Caribbean sea service. The torpedo boats included the Dupont, Porter and Roman.

Congress in 1896 responded to the rapidly growing national sentiment in favor of a larger navy. The naval program adopted that year included the three firstclass battleships Alabama, Illinois and Wisconsin, and ten torpedo boats. The American public was beginning to realize the growing importance of the United States as a world power. American commerce abroad had been growing by leaps and bounds for nearly ten years and American commercial interests were reaching out to lands where the American flag before had been an unfamiliar sight. The rapid expansion of American commerce, too, had created jealousy in commercial circles of rival powers. It was dimly realized that commercial jealousy might lead to complications the result of which would be disastrous to American trade as well as to American prestige. Unconsciously the demand for a stronger navy to defend American interests abroad took root in the minds of the American people. Congress responded to the demand and a sentiment in favor of a larger naval force took root in the senate and house of representatives. The naval program of 1896 was the first response to this national sentiment. The three battleships were somewhat larger and more powerful than any yet built. They were not completed when the war with Spain began, but, as events proved, their services were not required.

Congress in 1897 added but three torpedo boats and a training ship to the navy, but in 1898, the naval program was the largest ever authorized at a single session of congress. The list included three firstclass battleships larger than any before designed for the American navy, sixteen torpedo boat destroyers—the first ever built by the United States, twelve torpedo boats, four coast defense monitors and one gunboat. The Spanish-American war undoubtedly was the direct moving cause of this generous expansion of the navy. The war had demonstrated the fact that the United States could not claim immunity from war with a foreign power and that the naval

combats of the future were to be fought with firstclass battleships. The American navy was notoriously weak in battleship strength. Then, too, the early part of the war was filled with constant apprehension of an attack on the Atlantic coast by some of Spain's swift cruisers. The fears were ungrounded, but on paper at least, Spain had at least five armored cruisers, any one of which, effectively handled, might have worked untold disaster to any one of a dozen Atlantic coast cities. It was the remembrance of this fear that impelled congress to authorize the construction of the four coast defense monitors, Arkansas, Florida, Nevada and Wyoming. The necessities of the service during the war had also resulted in a demand for torpedo boat destroyers, and congress provided them.

The additions to the navy authorized by congress in 1898 were made in response to the same sentiment which impelled the notable additions the year before. Three firstclass battleships, the West Virginia, Nebraska and Georgia, three great armored cruisers, the California, Pennsylvania and Virginia, and six protected cruisers were provided for. The country's approval was so marked that congress in 1900 provided for two more firstclass battleships, the New Jersey and Rhode Island, three armored cruisers, the South Dakota, Maryland and Colorado, three protected cruisers of a new and advanced type, the Charleston, Milwaukee and St. Louis, each of 9,700 tons displacement.

Congress in 1900 also made a new departure in naval construction by providing for seven submarine torpedo boats. For several years the Holland submarine boat company had been conducting experiments in submarine navigation and finally had produced a submersible craft which won the approval of the navy department, which had watched the experiments with the closest detail. The experiments proved that a submarine boat could be navigated successfully under water, that the officers and crew could perform their duties with perfect comfort and safety and that torpedoes could be discharged from the submerged craft with reasonable accuracy. The navy department also had kept close watch of similar experiments made by the British and French navies, and was

satisfied that the American type of submarine warship was superior to any which had been developed abroad.

Congress had shown as early as 1893 its willingness to aid in the development of the submarine type. In 1893 the secretary of the navy was authorized to expend not to exceed $200,000 for the construction of the submarine torpedo boat Plunger. The contract for the boat was let on March 13, 1895, and work began. Meantime the inventors had perfected many new devices and made so many improvements upon the first plans that in April, 1900, the contract for the original Plunger was cancelled and another contract signed for a new and improved Plunger. In 1896 congress further encouraged the experiments by authorizing the navy department to contract for two additional submarines to cost not to exceed $175,000 each. The Holland company constructed two boats, one of which was purchased by the government. By this time the naval authoritives were fully convinced of the practicability of the submarine warship and in 1900 congress authorized the construction of seven additional boats—the Adder, Grampus, Holland, Moccasin, Pike, Porpoise and Shark, the sum of $170,000 each being appropriated for the hull and machinery.

The navy has adopted the submarine torpedo boat with enthusiasm. Officers and men have proven eager for service in them and all boats now in commission are in the hands of men trained in the submarine service. Doubtless congress will continue the development of the submarine fleet until a sufficient number of this type of war craft has been added to the navy to render effectual protection to all the harbors along the coast. The moral effect of the knowledge that a harbor contains one or more submarine torpedo boats, it is believed. will give more effectual protection against the fleet of an enemy than any number of submarine mines, either contact or floating. An enemy's fleet is likely to keep at a safe distance from the coast when it knows that that coast is patrolled by submarine boats, able to cruise for many miles under water and able to detect a hostile fleet long before the officers of the hostile fleet can locate the submarine.

Two firstclass battleships, the Connecticut and the Louisiana, two armored cruisers, the Tennessee and Washington,

two gunboats, the Dubuque and Paducah, were authorized by congress in 1902. The congress of 1903 authorized even a greater addition to the navy, providing for no less than five firstclass battleships of 16,000 tons displacement each, the equals of any fighting ships afloat in any navy. In 1904 congress added a firstclass battleship, and three swift cruisers to the navy, while the naval program of 1905 added two more firstclass battleships to the fighting fleet.

The expansion of the navy continues. No limit has been fixed by naval authority, congressional action or public sentiment. The general naval board at the head of which stands Admiral Dewey is on record officially as stating that the work of construction should continue without interruption until at least 48 firstclass battleships and 48 firstclass armored cruisers of the heaviest class and highest type should be in commission. That estimate is based on what to their minds is the present needs of the government. After that number of battleships and cruisers had been added to the navy the future needs of the nation would be a matter for consideration. The present navy is far below the minimum strength favored by Admiral Dewey and the general naval board. The battleships now number twenty eight and the armored cruisers twelve. To bring the American naval strength up to the Dewey minimum, congress must provide twenty additional battleships and thirty six armored cruisers.

How large a navy does the United States need to uphold its dignity among the great powers of the earth, to protect its shores and its foreign possessions, to safeguard its rights in all parts of the world and to keep open the pathways of the seas to its commerce? Already the American navy stands second. It is superior to one of its two greatest commercial rivals—Germany, and only inferior to the other, Great Britain. Unquestionably the United States needs a greater navy than that which floats under the flag of Germany. Does it require a navy as strong as Great Britain's? The consensus of American opinion to-day is that the United States does not need a navy equal to that which sails under the union jack. England has colonies and naval stations in every quarter of the globe. These she must protect, not against one powerful nation, but

against a possible combination of three powerful nations. The United States has to protect only Porto Rico, the Panama canal, Hawaii and the Philippines. Porto Rico and the Panama canal are so near our own shores that to all practical purposes they form a part of our coast line. Obviously the United States must maintain a naval force in the Pacific strong enough to protect Hawaii and the Philippines against possible attack. The Hawaiian problem would not be difficult; for the islands, located in the center of the Pacific, are so far from any possible naval base that a comparatively small naval force could protect the islands. The Philippine problem is more difficult. To hold the islands against successful attack the United States must have a naval force in the Pacific strong enough to cope first of all, with Japan's fleet. Japan is close by, her fleet is powerful and doubtless will be greatly augmented. Next to Japan, Great Britain, France and Germany are the only great naval powers having large interests in the far east. The British Asiatic fleet is formidable, those of France and Germany not. Until France and Germany largely augment their fleets, neither could send a squadron to attack the Philippines defended by the naval force that the United States even now could dispatch to the defense of the islands. Great Britain has so many interests close to the United States that it is inconceivable that she would permit herself to be drawn into war with this country, even if other than material considerations were not involved. She would scarcely consider the alternative of exchanging Canada for the Philippines. So then, the United States in searching the world for possible enemies, may safely narrow the list to Germany, France and Japan. As has been shown, the United States already can defend the Philippines against Germany or France. The only great naval power that must be considered as formidable to American interest in the far east, therefore, is Japan. Unquestionably, in the future the United States must be able to cope with Japan in matching naval strength—battleship for battleship—with the Mikado.

To man the American fleet there are in commission 29,321 men, 80 per cent of whom are native born citizens. Congress has authorized an increased enlistment to bring up the total

number to 33,000. Doubtless within ten years 50,000 seamen will be required to man the fleet in time of peace. With the enlisted force there are: one admiral, 26 rear admirals, 386 captains, 122 commanders, 199 lieutenant commanders, 343 lieutenants, 173 ensigns, 104 midshipmen, 16 medical directors, 15 medical inspectors, 86 surgeons, 280 assistant surgeons, 135 pay directors, inspectors and paymasters, 23 chaplains, 12 professors of mathematics, 57 naval constructors and assistants, 32 civil engineers, 140 boatswains, 116 gunners 84 carpenters, 6 chief sailmakers, 180 machinists, and 52 pharmacists.

Added to this force is the marine corps of 241 officers and 5,367 men. The marine force is regarded, properly too, as being the finest force of fighting men ever sent to the firing line in any field in any land. There is scarcely a corner of the globe where American marines have not fought to protect American interests and save American lives. American marines have served, fought, and died in almost every republic on the South American continent, along the isthmus, in the islands of the West Indies, in the islands of the Pacific, in the Philippines, along the coasts of Japan and China, and along the coasts of the Mediterranean. The marine corps opened Japan to civilization. They fought side by side with British soldiers against the mobs in Alexandria, Egypt, at Taku, in China; and in Samoa, in the Pacific. They were the first American soldiers to land in Cuba during the Spanish-American war. They have put down native insurrections in Santo Domingo and Hayti, and to-day they guard American possessions in a score of ports in as many quarters of the globe.

In the Philippines are being constructed great naval and shipbuilding yards, docks, repair shops and supply depots, the government's intention being to make a naval base there, strictly independent of the United States so that the greatest ships of the navy may be outfitted, supplied, coaled, docked and repaired without the necessity of a visit to the United States. A similar naval base has been established near Honolulu.

The American navy is rich in tradition. Its sea fighters hold high place in the history of the naval warfare of the world. The roster of the navy's battles in the century and a quarter

of its existence fills many pages in the world's record of glory. And as long as ships float and there are men to fight them the story of the combats of America's warships will be retold by the pens of historians.

RECENT ADVANCE IN BATTLESHIPS.

BY J. D. JERROLD KELLEY.

[James Douglas Jerrold Kelley, commander U. S. N. and author; born New York, December 25, 1847; educated in public and private schools and Seton Hall college, N. J.; appointed to navy by President Lincoln; entered October 5, 1864; graduated from U. S. Naval academy, 1868; ensign, 1869; master, 1870; lieutenant, 1872; lieutenant commander, 1893; commander, 1899; prize essayist and gold medalist United States naval institute, 1881; member and chairman, board auxiliary vessels, 1898; inspector of merchant vessels at New York; command of Resolute, West Indies, and again inspector of merchant vessels. Author, The Ship's Company, The Story of Coast Defense, American Men o' War, American Yachts, Typical Yachts, A Desperate Chance, Our Navy, The Question of Ships, The Navy of the United States, etc.]

The development of offense and defense in war constructions finds its highest expression in the battleships of the Connecticut type. This is attributable mainly to the large displacement in which the various elements have found room for proper expansion and to the improvements made in structural material. In the earliest battleships most of the essential qualities had to be denied their greatest value owing to the compromises that were forced by the necessary association of such antagonistic factors as speed, battery, armoured protection, coal capacity, ammunition supply, habitability and seagoing and sea keeping powers. What had to be produced was not the best obtainable, but the best all round efficiency.

The principles of all constructive design are controlled by considerations of weight, and by its scientific distribution. If one of the qualities, speed for example, were to be unduly favored, through the assignment of extra weights to motive power, this would be at the expense of some other quality, such as protection, battery or coal capacity. In special types, of course, such a highly favored distribution is often adopted, in order to satisfy the particular employment for which a type is intended. But in a battleship it is impossible; there must be room and margin for many qualities, as it is a rounded production, wherein the total available weight must be distributed to produce not the very best but the best possible results.

Lieutenant Commander Niblack, U. S. N., put this cogent-

ly in a paper read before the society of naval architects and marine engineers. "The battleship is," he said, "the epitome of sea power. Reduced to its simplest terms, it is a floating gun platform. As a unit of defense it contains on the gun displacement the maximum of concentrated destructive power—for battle on high seas, for which it is primarily designed; Second, for coast attack, for which it is secondary and seldom used purpose. The difference between the tactical value of battleships and of cruisers, torpedo boats, submarine and rams, are those of degree rather than of kind, for each merely chooses some weapon or some quality of the battleship and sacrifices everything else to it. The special tactics suited to each are taken from the battleships." Hence it may be profitable to inquire into the considerations that have governed our designers in their treatment of the battleship question, especially as the question of displacement—whether large or moderate—is still in dispute.

The first class battleships may be separated into six groups, according to the period in which they were authorized, or into four groups if displacements and speed be taken. If, however, this latter standard be accepted the grouping would be inaccurate, as the gun energy and battery disposition thus assembled vary so greatly. To the first group belong the Indiana, Massachusetts and Oregon, of ten thousand three hundred tons, authorized in 1890; to the same class may be assigned the Iowa, of eleven thousand three hundred and forty tons, authorized in 1892. Antedating these was the well known ship, the Texas, now rated as a second class battleship. In the second group (1895) are the Kentucky and Kearsarge, of 11,540 tons; in the third (1896) the Alabama, Wisconsin and Illinois, of 11,565 tons, and in the fourth (1898), the Missouri, Maine, and Ohio, of 12,230 tons. The fifth group (1899) consists of the Georgia and Nebraska, and (1900) of the Virginia, Rhode Island and New Jersey, each of about 14,950 tons. Finally, we have the Connecticut and Louisiana and the new ones yet unnamed, provided for by congress.

The growth of displacement between the Oregon and the Connecticut period amounts to 5,700 tons, and the increase of the mean speed amounts to nearly two knots. Should the

1899 and 1900 constructions be taken as a standard for speed, the difference is nearly three knots.

A very radical difference of opinion exists among naval officers on the question of battleship displacement. A majority seem to favor displacement just as large as may, without diminishing any other essential element, be handled without difficulty and be able with safety to enter, the year around, the principal ports of our seaboards. An influential minority believe that ships should not be allowed to exceed 11,000 tons. It bases this conservatism on several grounds, the principal of which is that, other things being equal or nearly equal, a great number of units must be more effective than a more limited number, even if the latter be a large size. It is the control of numbers that, in its opinion, enables the work to be done. Formerly we heard a great deal of dismal prophecy from this minority. It is feared and proclaimed that, with large displacement, we are putting all our eggs in one basket, and that the loss of a ship means the destruction of an army corps. Fairly considered, the objections cited by the minority are more fanciful than real. Indeed, when the two types are submitted to the test of comparative battle efficiency what opposition could the imperfectly protected four 6-inch guns of the Oregon offer to the heavily protected armour, single casemated twelve 7-inch guns of the Connecticut class—the big guns being equal? And at the end of the fight, which should prove to be the cheaper group?

It is usually claimed that the 16,000 ton ship must be less handy than the 11,000 ton craft, that its maneuvering qualities must be inferior; but then, all battleships can be unhandy on occasion, and if the model tank experiments can be relied upon, the Connecticut promises, through its proportions and adjustments, to be at least equal in handiness to the earlier ships. Its draught will certainly be greater, but this will not forbid its entering an American harbor on the same stage of the tide that the Oregon or any other of our battleships so far designed, will have to use.

This increase in size of warships has been common to all navies in recent years and is coincident with the increase in merchant vessels. Such increase in size may involve decrease

in handiness and it may not—there is no compelling necessity —but it surely involves practically an increase in cost. In comparing the Connecticut with her predecessors, Chief Constructor Bolles, U. S. N., draws instructive and illuminating parallels, some of which may be paraphrased here. He declares that, first of all, the problem of the naval architect should be to produce the best military unit for the least amount of money, and that it remains for those who command naval vessels to say what limit of military power shall be placed upon the individual unit of the fleet. A distinguished foreigner recently asked why our battleships were so large or of so great displacement, and was told that the conditions of our service seemed to make it necessary for them to go anywhere and to be ready to fight when they got there.

While our recent battleships are undoubtedly large, the Virginia class of five vessels being 14,980 tons normal displacement, and the Connecticut class 16,000 tons normal displacement, there are unquestionably great advantages obtained in the individual power of the battleship as compared with its smaller predecessors.

To show justly the advantage of increase in size, comparisons should be made between ships which are tactically comparable, that is, of practically the same speed and whose motive power and battery are of substantially equally modern design. To demonstrate the effect of the increase in size of our battleships, a comparison in figures and percentages easy of comprehension can be made between the Alabama and Maine classes (our most recently completed classes), these last being considered together as of about 12,000 tons displacement, while the Connecticut class is of 16,000 tons. The cost of the Maine and Alabama, complete, is about $6,000,000 each. The cost of the Connecticut is about $7,500,000. The displacement has been increased 33 per cent in passing from the Maine and the Alabama to the Connecticut, and the cost of four Connecticuts will equal the cost of five Maines or Alabamas. The weight devoted to battery and ammunition in the Maine or the Alabama is 1,003 tons and in the Connecticut 1,340 tons. Therefore, by increasing the displacement of the Maine or the Alabama 33 per cent there has been a correspond-

ing increase in the weight of armament carried. The weight of the discharge of one round from all the guns of the Maine or the Alabama, over 6-pounders, is 5,312 lbs.; the weight of the discharge of one round from all guns, over 6-pounders, of the Connecticut is 7,856 lbs., or an increase of 47.9 per cent.

Therefore for an increase of one third in size there has been a gain of nearly one half in effective battery power. Thus, if the battery power of the Maine or the Alabama be considered unity, that of the Connecticut will be one and a half; and for $30,000,000 four Connecticuts can be built, with a battery power of six, and five Maines or Alabamas, with a battery power of five. In the Maine and the Alabama the weight devoted to armor protection amounted to 2,770 tons, and in the Connecticut to 3,992 tons, thus showing an increase in protection of 44 per cent for an increase in size of 33 per cent.

These illustrations of the enormous gain in offensive and defensive power of these vessels, corresponding to the increase in size, find well known parallels in the higher cargo efficiency of the great steamers in the merchant service, which is due to the fact that the larger vessel requires a less proportion of power and machinery weights than the smaller for equal results in strength and speed The advantages of the increase in size and length of the Connecticut are clearly shown, with reference to the elements of speed and power. Model basin trials prove that at a speed of eighteen knots the power required for the Connecticut is about six per cent less than that required for the new Maine; whereas at nineteen knots the power required for the Connecticut is nearly fifty per cent less than that of the Maine.

The gun is still the supreme sea weapon, for, though it may not be able to destroy, it can render a ship helpless by putting out of action its battery and personnel. "The individual gun," writes Lieutenant Commander Niblack, "is the unit of offense in one sense; but the combined fire of as many guns as possible, directed according to a definite scheme by means of a well organized fire control, alone means victory. The key to modern fleet actions is concentration of gun fire. To achieve this we must install our guns properly, and we must of all

things train our personnel. Fleet formations should be based on gun fire, and in battle we should limit tactical movements to those which least distribute it."

The difference between the heaviest naval ordnance of 1862 and 1902 is shown in the following table. It may contribute to a more definite appreciation of the revolution in shape and in power if the data of the guns be compared. In old ordnance of which we were justly so proud, the weights of the projectile and the charges are not the normal ones, but are those authorized for extraordinary circumstances—at ironclads at short distance.

	15-inch East-Iron Smooth-Bore Muzzle Loading.	12-inch Steel Built-Up Breech-Loading Rifle.
Weight	18.7 tons	52 tons
Length	15 ft. 1 inch	41 ft. 6 inches
Powder and charge	100 lbs. black powder	350 lbs. smokeless
Projectile	450 spherical	850 armour piercing
Velocity	1600 foot seconds	2800 foot seconds
Muzzle energy	7997 foot tons	42246 foot tons

The flash frigates of the Civil war carried as their favorite broadside gun the 9-inch smooth bore, 11 feet in length, that, with a ten pound charge and a seventy pound shot, developed an energy of 847 foot tons. The muzzle energy of the latest 12-inch rifle is therefore 54 times as great, so that one shot from one new turret gun will develop as much energy as both broadsides of a fighting 54-gun frigate of the days of sail or of sail and auxiliary steam.

Our present ordnance system dates in essentials from 1883. Tentative efforts had been made before this to replace or revamp the old ordnance, but without success, as the country could not produce the steel forgings necessary for heavy rifle cannon, and because the navy was in such decadence that it was deemed folly to spend money on it. Forgings were finally procured abroad, and the first modern 6-inch guns for the navy—not for experimental purposes, but for service—were completed in 1884. Since 1883, 1400 sets of gun forgings for main battery guns alone have been manufactured in the U. S. for the navy. The first large order by which this home industry was put on its feet was, in 1887, placed by Secretary

Whitney, of Mr. Cleveland's cabinet, with the Bethlehem Iron company (now steel company).

Curiously enough, no great change in principles of construction or material or in methods of manufacture has been made in twenty years. Larger forgings, with higher characteristics, are available, but the central idea adopted then still holds its place and testifies to the high intelligence and native ingenuity exercised by the ordnance officers of that day. Great progress has been made in the direction of greater power and of greater rapidity of fire. We secure the first because we know how to make and fire better and larger explosives; and the second, because of the gradual and simplifying improvements in the details of breech mechanism. The successful development of smokeless powder has enabled us to take a long step ahead.

The use of electricity with gun mountings has been a contributing energy, as it has done away with the heat and danger of steam pipes and has introduced ease and simplicity of power transmission of faculty of control. These in turn permit more accurate as well as more rapid pointing and firing. Still, with all the devices, intelligent and persistent drill is a prime necessity. This demands ample appropriations for target practice, and, for the individual, the employment of some true method of continuous aiming, and such recognition by the navy department that the gun pointers and captains will be the best paid men of the ship.

In an able discussion on the tactics of the gun by Lieut. Commander Niblack, he fortifies his contention that the key to modern action is concentration of gun fire. This officer declares:—Modern steam fleet tactics differ in many essentials from the tactics of the sailing ship period and from military tactics on shore. In the days of sailing ships practically all guns were necessarily mounted in broadside, and bow and stern fire, for structural reasons, were inconsiderable. The natural formation was column (or line ahead, as it is called abroad), as this gave the greatest effective fire, viz., broadside. In the approach of such fleets to each other in an engagement very few guns could be brought to bear and the preliminary maneuvering was generally to secure the weather gage, or

windward position, which gave the advantage of forcing the engagement or withdrawing from it. The supreme tactical advantage was gained by breaking the enemy's line (column of vessels), throwing his formation into confusion, raking his nearest ships and passing through and escaping most of his broadsides while delivering your own successfully and in its most effective form.

With modern battleships the installation of pairs of heavy guns in the ends of ships, and the introduction of the ram and the torpedo have changed naval tactics. Bow and stern fire is now a little less than 30 per cent of each broadside fire, instead of about 5 per cent, as in the sailing ship days, and to attempt to break through an enemy's column would be the height of folly. The leading ships, with less than 30 per cent of their total fire available, would, in attempting to break through, be withered by the powerful concentrated broadsides of the waiting column, or destroyed by his torpedoes, or sunk by his rams. Then, too, raking fire has lost its terrors because the bow and stern presentation of a modern battleship is very strong, owing to its concentration of heavy armor in the casements, barbettes and turrets. In other words, at close quarters, a raking fire is not necessarily any more disastrous than firing at broadsides. What this concentration of fire means may be seen by an examination of the gun plans of the Connecticut and a study of the arcs of fire through which the heavily protected main and intermediate batteries of the ship can sweep their destructive energies of discharge.

We have thus in modern steam fleet tactics a sort of half way, or a compromise, on sailing ships and military tactics, for to turn the enemy's flank, as in the army, is a good maneuver; the approach to the attack in line abreast is now feasible, as it gives about 30 per cent of gun fire; and column, as in the past, is the formation giving maximum effective gun fire.

To state the general proposition more in detail, with steam and modern improvements:—First. Bow fire has become a great factor in modifying tactics. Second. The ram is more than ever a dangerous and fatal weapon. Third. Armor has almost nullified the great danger from raking fire at close quarters. Fourth. The torpedo has made it dan-

gerous to fight at closer range than 1,000 yards. Fifth. Smokeless powder and high speed make the windward position of little importance compared with getting the sunlight on the enemy and in his eyes. Sixth. Elaborate subdivisions in ships tend to prolong the time and increase the difficulties of the destruction of a ship by any weapon.

OUR ADVANCE IN TORPEDO CRAFT.

BY J. D. JERROLD KELLEY.

[James Douglas Jerrold Kelley, commander U. S. N. and author; born New York, December 25, 1847; educated in public and private schools and Seton Hall college, N. J.; appointed to navy by President Lincoln; entered October 5, 1864; graduated from U. S. Naval academy, 1868; ensign, 1869; master, 1870; lieutenant, 1872; lieutenant commander, 1893; commander, 1899; prize essayist and gold medalist United States naval institute, 1881; member and chairman, board auxiliary vessels, 1898; inspector of merchant vessels at New York; command of Resolute, West Indies, and again inspector of merchant vessels. Author, The Ship's Company, A Desperate Chance, Our Navy, The Question of Ships, The Navy of the United States, etc.]

The war between Russia and Japan has rehabilitated torpedoes and torpedo craft and has called for a readjustment of opinion on warship construction the world over. It is, for example, authoritatively stated that the new battleships provided in the recent British estimates are to have their armor so disposed and their water-tight bulkheads systems so rearranged as to decrease the acknowledged vulnerability of armored vessels to successful torpedo attacks. It will be interesting to discover the nature of these departures from accepted practices. It is well known that both the Russian battleships, the Tsarevitch and the Retvizan, carried armor on the bilges and additional longitudinal and transverse bulkheads, with the intention of securing such immunity, and yet in the memorable surprise of the Port Arthur fleet they were put out of action by the skill and audacity of Japanese crews handling well equipped and properly supported torpedo vessels.

The inevitable effect of the primary Japanese successes was to intensify the differences between two schools of naval thought—one holding that the torpedo is the most terrible instrument of destruction placed in our hands and the other that heretofore it has been too complicated and unreliable a weapon to warrant development. Torpedo enthusiasts plunged into unreasonable prophecies and have emerged with impossible promises. As a rule, battleship advocates—and these constitute a very great majority in all services—held to their faith, while acknowledging the proven value of torpedo craft. A few of them, indeed, go so far in a stubborn

opposition to the claims of their opponents as to deny that anything has been achieved that disturbs the views fortified by all previous experience. But this is sheer idleness, as the truth probably lies nearly half way. New light on all problems has certainly been let in; but while this tends to clear the situation it does not show that the armoured type has been displaced as the supreme instrument of modern war. One thing is certain. The dominating value of sea power has through the harmonious and skillful employment of all energies been reasserted.

It is also true that among components of sea power the relative rank of the fighting units has been disturbed, if not rearranged. The vulnerability of huge ships, always more or less accepted by the sober minded, is now generally conceded; but this, let it be kept in mind, is the vulnerability open not only to lucky torpedoes, but to equally lucky shell and shot. Unless this be true, Chemulpo has left no lesson.

In this possible rearrangement of the minor type the torpedo boat destroyer leads, and properly, because in one memorable assault its possibilities were so clearly revealed that the primary place among the auxiliaries must be assigned to it. A deliberate distinction is attempted in this use of the word auxiliaries. The destroyer is—and if the lessons of all sea wars be read aright it must remain—an auxiliary—that is, a secondary, not a primary, energy. Without the assistance of torpedo craft the battleship line may be weakened, but only in degree; without the battleship base, support, and guidance, the torpedo attack is almost certain to be impotent. And for this reason:—The destroyer is a weapon of opportunity and surprise, fragile in construction, poorly armed, except against its fellows, and destructive in the strain it imposes on the physical and moral stamina of its crew. It can act alone under exceptional circumstances only, and if attacked, as it can be at ranges to which it can offer no reply, it must run or be sunk. Witness in proof of this how on several occasions the Russian cruiser Novik scattered the flotillas off Port Arthur's entrance.

It is difficult to determine how far this development of the torpedo destroyer may be pushed as a consequence of its

new achievements in the war. The type has progressed illogically, undeterminedly but surely, from small harbor defense craft up to seagoing vessels that have belted the world without let or hindrance—usually, it must be added, under convoy, and always with convenient ports of reequipment and recruitment. It is certain that the period of great speed eagerly pursued for years was carried too far and that a corresponding weakness in construction and in sea keeping and defensive qualities has attended this. Most of the naval powers are therefore lowering the former standard of thirty knots and more to a scale that veers and hauls about twenty seven knots, and at the same time they are strengthening the craft and installing higher gun power. British experts seek a further increase of displacement, up to and perhaps beyond five hundred tons, but danger lies in this tendency, as the type will then become a hybrid that possesses neither the qualities imperative in a torpedo destroyer nor those essential to a minor cruiser.

In the data of development it is interesting to study the following record of torpedo warfare set down in a capital article in the Naval Institute, written by Lieut. Lloyd Chandler, U. S. N., late commander of the torpedo boat flotilla, that made the successful run from the Atlantic coast to the Philippines:

(*a*) May 29, 1877, the English cruiser Shah fired one Whitehead torpedo at the Peruvian Huascar, but it had not power to run the distance.

(*b*) Dec. 27, 1877, the Russian ship Tchesne fired a torpedo at the Turkish Mahmoodoeh, and the weapon ran, but exploded before reaching the target. The Russian Sinope fired another at the same time, but it failed to explode.

(*c*) Jan. 25, 1878, the Tchesne and Sinope fired one Whitehead torpedo each at a Turkish guard ship at the entrance to the harbor at Batoun, both of which exploded under and sank the Turkish vessel.

(*d*) Jan. 27, 1891, a torpedo launch from the Chilian Blanco, in revolt, fired a Whitehead at the Balmacdist armed steamer Imperial, but missed her.

(*e*) April 23, 1891, the Chilian government vessels Lynch and Condell attacked the revolutionary fleet in Caldera bay

and fired five Whitehead torpedoes, one or more of which sank the Blanco Encalda.

(*f*) May 14, 1891, the Condell and Lynch again attempted to surprise the revolutionary ships, but could not get near enough to fire.

(*g*) April 4, 1894, the Brazilian government vessels Gustavo Sampaio, Alphonso Pedro, Pedro Ivo and Silvado attempted an attack on the revolutionary flagship Aquidaban, but were repulsed before they got within torpedo range. The next night they tried again and one of the four Whitehead torpedoes fired sank the adversary.

(*h*) July 25, 1894, the Japanese claim that in time of peace the Chinese Tsi-Yuen treacherously fired a torpedo at the Naniwa Khan, but missed her. The Chinese deny, and probably truthfully, that this ever occurred.

(*i*) Sep. 17, 1894, at the battle of the Yalu the Chinese fired several torpedoes but missed.

(*j*) Jan. 20, 1895, sixteen Japanese torpedo boats attacked the Chinese fleet in Wei-Hai-Wei, but failed.

(*k*) Feb. 4, 1895, at the same place the same attempt was repeated and failed.

(*l*) Feb. 5, 1895, at the same place the same attempt was repeated and as a result the Ting-Yuen, Wei-Yuen and Lai-Yuen were sunk at once, and the Ching-Yuen was so disabled that she sank not long after.

Here, in a last analysis, is what Lieut. Chandler finds to be the truth:—

"It is seen that, discarding the doubtful case in which the Japanese claim a breach of peace by the Tsi-Yuen, out of eleven attacks four succeeded, resulting in the destruction of seven vessels. With improved weapons now in use it seems certain to be that at least equal and probably better results should be expected and this record appears to me sufficient to substantiate all that I have ever claimed for the torpedo. While it is not a weapon that will revolutionize warfare or lead to the abolition of other types of ships, it is an arm far too valuable to be abandoned. And it is one that will well repay the care and attention necessary for the maintenance of a properly organized torpedo service."

The Whitehead torpedo, employed in our service, except on board the Iowa, where the Howell is installed, is technically known as an automobile weapon, in contradistinction to the dirigible type, which is electrically directed by means of wires from an operating base. The form of this complex instrument varies, but popularly speaking it is a cigar shaped vessel separated into various compartments. Counting from the bow, these isolated spaces are assigned: (1) to the war head, (2) to the air flask, (3) to the immersion or diving chamber, (4) to the engine room, (5) to the after body, and (6) to the tail.

Extending beyond the war head, which contains a guncotton charge and the percussion igniter and its charge, is a screw fan free to revolve. After the torpedo has run a distance of about eighty yards this fan unscrews sufficiently to put in operation a percussion firing apparatus. Should the fan strike an unyielding substance, it and the spindle on which it revolves and the firing pin are driven against a fulminate of mercury percussion cap. This impact detonates the dry guncotton firing charge, and the latter ignites the wet guncotton contained in the war head. The air flask, occupying nearly two thirds of the entire length of the weapon, holds the compressed air used for driving the machinery. This air flask, it may be said in passing, can be recharged whenever the occasion demands, by pumps that produce an exceedingly high pressure. Located in the immersion chamber is a delicate apparatus that carries and keeps the torpedo at the depth of water predetermined for its immersed travel. The flight of the weapon is directed by two rudders—one a compound horizontal, which controls the depth of immersion, and the other a compound vertical, which shapes the course. The former, located in the immersion chamber, maintains the prescribed depth through the action of a hydrostatic piston. The face of the piston is exposed to the water, and when the torpedo goes below the fixed depth this piston is pushed in by the increased water pressure. The rudders are turned at a lifting angle and the torpedo rises until the desired level is reached. Should the torpedo be above the depth set, a reverse action takes place. In addition to this gear a pendulum, also connected with the

horizontal rudder, is employed to prevent its giving too rank a sheer to the weapon.

The compressed air passes from the flask into the engine room through a pipe governed by several valves, and works under normal conditions an engine that is exceedingly light in construction and very accurate in adjustment and operation. The afterbody, shut off from the engine room by steel bulkhead, provides the necessary flotation for the weapon, and in the torpedo tail are carried the rods that control the rudders and the shafts that drive the screws. Other devices are employed, most notable among them being the Obry gear, or gyroscope, which automatically controls the vertical rudder. This compels the torpedo, no matter what deflection is encountered when it enters the water, to return to the original line on which the destroyer's tube was pointed when the firing key was first pressed. "The immense simplification of aiming that has resulted from the adoption of this device," writes Lieut. Chandler, "must be apparent, and the gyroscope has made out of the torpedo a weapon that within its range is far more accurate than the gun." "There is no doubt in the mind of officers," declares Commander Murdock, "that a torpedo exploded along the side or under a vessel will cripple if it does not destroy her."

Argument must therefore focus on the single question, Can a torpedo be made to hit? or, in one word, on its reliability. Nothing in the world can determine this but actual trial. And it is noticeable that all officers that have had extended torpedo boat service agree with Lieut. Chandler that the torpedo ranks with the gun in reliability. One expert puts it that the torpedo excels the gun in accuracy, from the fact that its errors are all in training, the serious question of elevation being eliminated."

Many improvements have been made in the torpedo and in its launching apparatus within the last few years, though the secret of these is jealously guarded. Among the most ingenious is one that enables the commanding officer of a vessel carrying torpedoes to point his ship at the spot he desires to hit and then by electric firing gear to discharge the torpedoes from all the tubes simultaneously and in such a

way that they will, after striking the water, turn and run parallel to the course of the ship. With a three tube boat, like the Morris, for example, he could thus discharge three torpedoes running into a danger zone about one hundred yards wide, one on each side of the zone and the third down the middle of it. The possibilities of a hit under such circumstances are enormous. Among other devices undergoing trial is one that superheats the compressed air before it enters the engine. The raising of temperature is most necessary, because when the compressed air is free it expands, producing a low temperature that reduces its energies. An illustration of this is found in ice machines and in the apparatus used for producing liquid air. Another device simplifies and renders more certain the operation of the Obry gear by means of electrical connections, and a third substitutes turbine machinery for the present reciprocating engines. A well known expert sees in this substitution a jump in speed to at least forty knots for the eight hundred yard run and a correspondingly great increase of range at lower speed.

In some of our earliest steel vessels above water tubes for launching torpedoes were employed, but these were more a menace to the ship than a probable danger to the enemy, and further installations ceased. A number of battleships and armored cruisers had therefore been built without any provision for a torpedo armament, and while foreign constructors have marvelled at this failure to utilize so valuable an energy our officials charged with the policy of design have claimed good reasons for a policy that has now been reversed. They said, for example, that the torpedo was an erratic and unreliable weapon and that its maximum range was limited to eight hundred yards. It was argued also that the vastly increased power of guns must cause sea actions to be fought at long ranges, beginning at six thousand yards and working in, but never closing nearer than two thousand yards, and the battles of Yalu and Santiago were cited as proofs of this contention. It is curious to note here that no mention was made of the contingencies that might induce closer fighting. Among such unexpected conditions is the desire of the victor to crush his enemy with a final blow or of the defeated to exert one

last effort with ram or torpedo; nor does it appear that any account was taken of the actions that might arise through mistaken signals, the ardor of captains to fight or the ignorance and neglect of tactical principles.

In the meantime experimenters and inventors have been busy, and finally they have produced a weapon that has been fired with facility and accuracy at various angles and in a range of three thousand yards has hit the trial target regularly. It is true, as some objectors insist, that tidal currents may effect the path of the weapon, but not the sea ways where the emersion is sufficient and the automatic controlling gear functions. The old theory that battleship must fight battleship has also been replaced by the belief that the supreme test of the future will be found not in a series of duels but in fleet actions. So even at three thousand yards, the maximum distance at which guns are sure of hitting—the stray and unusually lucky shot excluded—a flight of under water discharged torpedoes is fairly certain to find one target or more. Then, the moral effect on the crews has to be considered. The torpedo is, if nothing more, an additional weapon which at the outset of an action puts us on an equality with our rivals, while no possible initial advantage is gained by its omission and no excessive penalty in displacement is paid by its addition. These broader views have finally prevailed, and the latest official determination is to equip all armored vessels and possibly some of the superior cruisers and scouts—with submerged torpedo tubes. In the heavier ships the long range and in the lighter vessels and the destroyers and torpedo boats the short range torpedoes are hereafter to be installed.

Too much stress cannot be laid on the value of torpedo vessels as schools of practice and training. It is believed abroad that the experience gained on board torpedo destroyers is the very best preparation for future command that can be given to young officers. Torpedo flotillas supply the most concentrated and least wasteful form and opportunities that develop the highest qualities of the seaman, and duty on board of them reveals the aptitude for command, and furnishes the experiences that foster self reliance, responsibility, and readiness in emergencies. It is a rigorous school, the last place for dul-

lards and laggards, but the rewards are commensurately great and the work is eagerly sought. Our inferiority in the number of vessels commissioned for this duty counts tremendously against an all round naval efficiency and calls for a new order of things as soon as the emergencies and the deficiencies in personnel permit. If we are to be guided by the best foreign experience, and notably by the lessons of the Russian-Japanese war, many divisions of torpedo craft must hereafter be kept in commission and the duty be made attractive to the best talent of the service and be of a nature that will yield the greatest profit. Paradoxical as it may seem, comparatively long periods passed at sea do not supply the best training. In France the torpedo service is deemed to be above all a school of pilotage. Night exercises are particularly insisted upon, as destroyers will have to fight mainly at night, and for this reason the training and experience that enable officers to carry their vessels safely into difficult and unlighted channels are of the highest importance.

ARMOUR PLATE MAKING IN THE UNITED STATES.

BY CHARLES O'NEIL.

[Charles O'Neil, rear-admiral U. S. N.; born England, 1842; entered the United States navy on the sloop Cumberland as master's mate, July 1861, and was with it at the capture of Forts Hatteras and Clarke, August 1861; in engagement with confederate ironclad Merrimac 1862; rescued lieutenant Morris from drowning; was favorably mentioned in dispatches and promoted to acting master, 1862; was in both attacks on Fort Fisher; promoted acting volunteer lieutenant 1865; commissioned lieutenant 1868; lieutenant commander 1868; commander 1884; captain 1897; chief naval bureau of ordnance 1897, rear admiral April 22, 1901.]

The manufacture of armour plate as an industry in the United States dates back only to the year 1888, as prior to that time, there being no demand for armour, no establishment in the country was equipped with the necessary machinery for making it, or fully understood the process of manufacture; but as soon as a demand was created, private enterprise quickly provided a source of supply. It is difficult at this time to understand the indifference that existed in this country for a period of at least twenty five years prior to 1888 with regard to armoured ships of war,—a subject which during that time had deeply engrossed the attention of other leading maritime nations of the world, several of which had created powerful fleets of ironclad vessels before the people of the United States had awakened to the necessity of following their example. The enjoyment of peace after the long years of civil war no doubt had much to do with this seeming indifference. During the succeeding years the wooden ships of which the United States navy was almost entirely composed gradually went to decay, until there was but a vestige of a navy remaining; and when matters got to the worst, in 1883, a reaction set in and the United States government went to work seriously to build up a modern navy, and found that it was necessary to aid and encourage several new branches of industry which did not exist in the country, but which were necessary in the construction and equipment of modern ships of war.

The United States navy register of 1864 contains among the list of vessels of the navy the names of seventy three iron-

clads, showing that the use of armoured protection for vessels of war, even though of an inferior quality, was recognized as an essential feature of their construction at that period, which makes it all the more astonishing that the matter should have been so completely dropped after the close of the Civil war and allowed to slumber for a period of twenty five years.

The vessels referred to consisted of double and single turreted monitors, of which several remain on the navy list to-day, though the vessels themselves are of but little value, having obsolete guns and very inferior armour. There were also some of the so called light draught monitors, which proved to be utter failures, and a number of Mississippi river steamers which had been adapted for military purposes, and a few of more notable type, such as the Dunderberg, New Ironsides, Galena, and Keokuk.

The armour of nearly all of the United States vessels of that period consisted of several layers of thin plates, each about 1 inch thick, laid on heavy wooden backing; and while of very inferior quality, as viewed from the present standpoint of efficiency, it proved to be quite effective against the artillery then opposed to it. The old monitors received many hits off Charleston, some of the records being as follows:—Montauk, hit 214 times; Weehawken, 187 times; Patapsco, 141 times; Passaic, 134 times; Catskill, 106 times; Nahant, 105 times; Nantucket, 104 times; Lehigh, 36 times; and the New Ironsides, 193 times. Many of these hits were from 10-inch guns, and though the vessels were, as a rule, able to remain at their stations, they suffered considerable injury, though but little was said about it at the time.

The most notable United States ironclads of that period were the Dunderberg and the New Ironsides, and a few words concerning them may not be without interest. The Dunderberg (or Thundering Mountain) was built by William H. Webb, at New York, and is described in the official papers as an iron clad, shot-proof, steam-screw ship of war with ram, to be built of wood and cased with iron. She was designed to carry two revolving gun turrets on the casemate deck, each 21 feet in diameter and 8 feet high in the clear, the armour iron of which was to be 11 inches thick. Each turret was to contain two

guns of 15-inch caliber, and in the casemate eight 11-inch Dahlgren guns were to be carried. The turrets were to be turned by steam. There was to be a shot proof pilot house on one of the turrets or on the casemate deck. The engines and boilers were to be of sufficient capacity to propel the vessel at least 15 knots per hour for twelve consecutive hours in fair weather and smooth water at sea. The vessel was to be completed in fifteen months from July 3, 1862. The guns were to be supplied by the government, but the contractors were to furnish the gun carriages. The contract price was $1,250,000.

The port shutters were of wrought iron, 4½ inches thick, and the outer hull was of wood, 6 feet thick at the main deck level, decreasing to 2 feet at the bilge. The under water body was coppered. The sides of the vessel from the main deck to about 5 feet below the load water line were covered with iron 3½ inches thick from deck to water line, tapering to 2½ inches at the lower edge, and also tapering towards the bow and stern to 2½ inches, made in slabs placed vertically. The sloping sides and ends of the casemate were covered with iron plates 4½ inches thick, made in one thickness, and about 28 inches wide.

The ship itself was a little over 380 feet long and of 73 feet beam, with a displacement of 7000 tons. The total weight of armour was 1000 tons. The engines were of about 5000 indicated horse power.

The armament as projected was probably more than the ship could carry, and it was finally decided to omit the turrets and the turret guns, and to give the vessel two 15-inch and four 11-inch guns, one 15-inch and one 11-inch gun to be mounted on each broadside and one 11-inch at each end of the casemate. This battery was mounted about February, 1867, from which it will appear that instead of being completed in October, 1863, as required by the contract, the vessel was not completed until three years and a half later.

On February 22, 1867, the Dunderberg went to sea to test her battery, and its general performance was reported as satisfactory. On account of the omission of the turrets a deduction of $22,860 was made from the contract price. It

does not appear that a regular speed trial was made, but it is recorded that at one time a speed of ten knots was attained.

After the vessel was completed, she was, by authority of congress, turned over to the builders upon payment by them of all moneys paid or advanced by the government, and Mr. Webb then sold the ship to the French government. After some alterations, she was put in the service of the French navy, under the name of Rochambeau. There are no records available showing the nature of these alterations or her later history.

The New Ironsides was designed and built by the Cramp snipbuilding company, of Philadelphia, but the scheme of the vessel was due to Mr. B. H. Bartol, of the Philadelphia engine building firm of Merrick and Co. She was called a casemated ironclad frigate, with unarmoured ends, except that her waterline was protected by a complete belt. Her battery consisted of fourteen 11-inch smooth bores and two 8-inch rifles mounted in a casemate. Her steam speed was about six knots, but she had a good spread of sail in addition. Her armour consisted of 4½-inch solid iron plates, backed by 21 inches of oak, the inclination of the casemate being 30 degrees from the perpendicular. The armour plates were made at Pittsburg.

For two years this ship was subjected to the most severe test a war vessel can undergo,—alternate blockade duty and close action against fortifications during the American Civil war. On one occasion she remained in action three hours, alone, against the combined forts of Charleston harbor, holding down the artillery fire of the batteries until she was obliged to haul out for lack of ammunition. During this time she was struck on her side armour sixty times, but an investigation showed her to be entirely uninjured. In a period of about six months the New Ironsides was struck 193 times, and was never forced to leave the station for repairs. After the Civil war the vessel was laid up at League Island, Philadelphia, and was destroyed by an accidental fire.

The confederate American ironclad steamers Merrimac, Atlanta, and Tennessee are well worthy of mention; for when we consider the limited means at hand and the lack of skilled labor available, the results achieved can not but excite the admiration of naval people. As is well known, the Merrimac,

or Virginia, as she was officially known, was the United States frigate Merrimac, which fell into the hands of the confederacy at the Norfolk navy yard when it was abandoned by the United States forces. She was cut down, and a heavy casemate of timber was built upon her. This was covered with two layers of narrow bars of rolled iron, each $1\frac{1}{2}$ inches thick, making a total of 3 inches. These slabs were rolled from railroad iron, and were, therefore, of excellent material. This iron plating was laid over 20 inches of oak, and was placed at an angle of about 30 degrees from the horizontal. So far as known, no material damage was done to the armour of the Merrimac by the fire of any of the vessels in action with her, among them the historic Monitor.

The confederate steamer Atlanta was built by converting an iron hulled blockade running steamer. Additional displacement was given her by sponsoning her out with square logs, thus increasing her beam, and she was fitted with a central casemate, or citadel, built of 15 inches of Georgia pine, covered by 3 inches of oak, on which were laid two courses of 2-inch iron bars, 7 inches wide (probably rolled from railroad iron), the inner layer being horizontal and the outer one vertical, the fastenings being $1\frac{1}{4}$-inch through-bolts set up with nuts and washers. She had a battery of two 6-inch and two 7-inch rifles. The sides of the casemates were inclined at an angle of about 30 degrees from the horizontal.

The Atlanta, under the command of Captain William A. Webb, of the confederate navy, was captured by the United States monitor Weehawken, Captain John Rogers, on July 17, 1863, in the sounds of North Carolina. The Weehawken fired five shots, three of which took effect, penetrating the Atlanta's armor and killing or wounding many of the crew of two guns. She grounded and surrendered.

The confederate ship Tennessee was after the same type as the Atlanta, but was built of wood and specially constructed for use as a vessel of war, and was, therefore, somewhat heavier. The framing of the casemate consisted of an inside diagonal ceiling of $2\frac{1}{2}$ inches oak; vertical pine timbers 13 inches thick; an outside layer of 4 inches of oak timber covered by three thicknesses of 2-inch iron bars, 7 inches wide, the whole fast-

ened by $1\frac{1}{2}$-inch through-bolts set up with nuts on the inside. The armour of the ends of the casemate was 1 inch less in thickness. At the battle of Mobile bay a 15-inch shot from one of the monitors smashed in the port side of the Tennessee's casemate, though the shot itself did not get through. She was struck many times and suffered much injury.

From the vessels above described to the steel clad floating fortresses of to-day was a gigantic stride, though the time required for its accomplishment was by no means great. The first of the armoured vessels of the modern United States navy were the ill fated Maine and the Texas, authorized by congress March 3, 1886, which act also provided for the reconstruction of the monitors Puritan, Monadnock, Amphitrite, and Terror. This authorization was followed by the issue of a circular by the United States navy department, dated August 21, 1886, inviting bids for armour plate and gun steel of domestic manufacture; and the consideration of the manufacture of modern armour in the United States may be said to date from the issue of this circular.

The bids received under this advertisement were opened on March 22, 1887, proposals being received from what is now the Bethlehem Steel company, of South Bethlehem, Pa., for both; from the Cambria Iron company, of Johnstown, Pa., and from the Midvale Steel company, of Philadelphia, for gun steel only; and from the Cambria rolling mill company, of Johnstown, Pa., for armour plates only. The bid of the Bethlehem company being the only one for both kinds of material, and being, in the aggregate, the lowest, was accepted, and a contract was made with that company on June 1, 1887, for both armour and gun steel. This contract included armour for the second class battleships Maine and Texas, and for the monitors Puritan, Monadnock, Amphitrite and Terror.

The amount of armour contracted for was estimated at about 6,700 tons, and was to be of plain steel, oil tempered, and annealed; but prior to the first deliveries, which were made in the fall of 1891, radical changes were made in the specifications, and the introduction of nickel and the use of the reforging and face hardening processes were included.

About the year 1888 a sufficient quantity of armour was

ordered from Great Britain for the monitor Miantonomoh, this being of the type known as compound armour, its cost being $535 per ton. Prior to the date of the circular above referred to, numerous experiments had been made in Great Britain, Russia, Italy, France, and Germany with various types of armour, and from 1882 to 1887 the contest for superiority lay between the compound and the all steel plates, British manufacturers presenting the former, while Messrs. Schneider & Co., of France, were the chief advocates of the latter.

Compound armour generally resisted penetration better than the all steel plate, because it was possible to make the thin steel face of the former much harder than that of the all steel plate, without sacrificing the toughness necessary to prevent breaking up. The chief failure of the compound plate was in the flaking off of the steel face from its iron back. This led to a continued effort to produce all steel plates that would present a hard face and still retain sufficient toughness. By the introduction in 1889, of a small percentage of nickel in the manufacture of steel, unusual toughness was produced.

Such was the armour situation when the United States government commenced the building of armoured vessels for its new navy; and while, as previously stated, the armour ordered for the first of the new vessels was of plain steel, it gave place to that containing nickel as the result of the first important armour test made in the United States at the Annapolis proving ground, in September, 1890. This test was made principally to determine the respective values of plain steel, of nickel steel, and of compound armour plates.

To carry out this experiment three plates of equal dimensions were procured, namely, 8 feet by 6 feet by 10½ inches, and were subjected to similar attacks. The plates tested consisted of a compound plate made by Messrs. Cammel & Co., Ltd., of Sheffield, England; a plain steel plate made by Messrs. Schneider & Co., of Le Creusot, France, and a nickel steel plate also made by the latter firm. All three plates were subjected to five impacts, four by a 100-pound armour piercing projectile fired from a 6-inch gun, with a striking velocity of 2075 foot-seconds, one shot being directed at each

corner of the plates; and a fifth impact by a 210-pound projectile, fired from an 8-inch gun, with a striking velocity of 1890 foot-seconds, at the center of the plates. All three plates were supported by 36 inches of oak backing. The compound plate was perforated by all the projectiles, and was practically destroyed by the 6-inch alone. The plain steel plate kept out all the projectiles, but was badly cracked by the 8-inch shot. The nickelsteel plate kept out all the projectiles, and remained without cracks. After these tests it was decided to use nickel steel for the armour of United States vessels, and the navy department took immediate steps to procure a large supply of nickel matte for such purpose.

Probably no step in the development of modern armour is more interesting or was of greater importance than was the introduction of the Harvey process of face hardening, originated by the late Hayward Augustus Harvey. At the time Harvey conceived the idea of face hardening steel plates, in 1889, he was president of the Harvey steel company, of Newark, N. J. During that year he treated a block of steel with a view to giving it a very hard face and great power of resistance, and was so successful that he brought his experiments to the attention of the navy department, which, at his request, furnished him a small plate 6 inches thick, which was treated at the company's works in Newark, was face hardened at the Washington navy yard under Mr. Harvey's directions, and was tested at the naval proving ground at Annapolis in 1890.

This plate was made by the Linden steel company, of Pittsburgh. It was cut in halves, and one half was treated by the Harvey process, while the other half was left untreated. When tested, the treated part showed such superior qualities of resistance over the untreated one that the navy department decided to experiment on a larger scale, and, therefore, procured from Messrs. Schneider & Co., of Le Creusot, France, a steel plate $10\frac{1}{2}$ inches in thickness, there being at that time no facilities in the United States for the manufacture of such plates.

This plate was treated at the Washington navy yard in January, 1891, in a furnace especially erected for the purpose,

under the direction of Mr. Harvey. The bed of the furnace being first covered with sand a few inches thick, the plate was laid on it in a horizontal position, and its upper face, which was to be treated, was covered with a layer of carburizing material, probably a mixture of animal and vegetable charcoal, about a foot thick, over which was laid a covering of tiles to exclude the flame and air from the plate. The doors of the furnace were bricked up, the fires were started, and a high degree of heat was maintained for about one hundred hours.

Much difficulty was experienced in getting the heated plate out of the furnace, and a period of five hours was consumed for this purpose, as the arrangements were very crude. When the plate was finally free from the furnace and was hauled under the sprinkling trough, it was of a dull cherry red color, and in this condition it was heavily sprayed on one side with jets of cold water, which fell several feet from the trough above. The cooled surface naturally contracted and distorted the plate, which curled up like a saucer. The spraying was continued until the plate was cooled to a black heat, when it recovered its shape somewhat, but the warping was then regarded as a serious objection to the process. In later plates, however, this was overcome by spraying the plates on both sides, and in the regular furnaces thereafter constructed the plates were laid on iron cars and could thus be readily removed. The writer of this article was at that time in charge of the naval gun factory, and thus had charge of this interesting experiment which was to cause so great a revolution in the character of the armoured protection of ships of war of all nations.

This imperfectly treated plate was tested at the Indian Head proving ground in February, 1891, being attacked by seven 6-inch projectiles of 100 pounds weight, having a striking velocity of 2065 foot-seconds. The greatest penetration was four inches, except in one round, that at the center of the plate, when the point of the shell reached the backing. All the projectiles were broken up. The plate was cracked, but until the last round no part of it was detached from the backing. At this round about one eighth of the plate fell to the ground. These results were considered remarkable, and it

was concluded that, by means of this method of treatment, armour of ideal quality, that is, having a very hard face combined with a rough back, without any weld or other line of demarcation between them, could be made.

The navy department, therefore, decided to hold a further series of armour trials in which the relative merits of plain and nickel steel of domestic manufacture, when treated by the Harvey process, should be submitted to exhaustive competition. Accordingly, eight plates, each 6 feet by 8 feet by $10\frac{1}{2}$ inches, were ordered, five from the Carnegie company and three from the Bethlehem company. The tests of these plates took place at Indian Head, Maryland, on October 31 and November 14, 1891, but only six plates were fired at, as two of those furnished by the Carnegie company were withdrawn on account of defects in manufacture.

Each plate received four impacts from 6-inch shell, one at each corner, and one 8-inch shell in the center. The 6-inch shell weighed 100 pounds, and were fired to give a striking velocity of 2075 foot-seconds. The 8-inch shell weighed 210 and 250 pounds, respectively, and were fired to give striking velocities of 1850 and 1700 foot-seconds, the energy being the same in either case. The three Bethlehem plates used were, respectively, a high carbon nickel steel, a medium carbon nickel steel, Harveyized, and a plain steel, Harveyized. The three Carnegie plates were, respectively, a high carbon nickel steel, a low carbon nickel steel, and a low carbon nickel steel, Harveyized.

All the plates showed greater resistance to penetration and less cracking than did the British compound plate of the previous year. Two of the plates showed greater resistance to perforation and less cracking than did the most resisting plate at the Annapolis test of the previous year.

The results given by the nickel steel plate treated by the Harvey process, manufactured by the Bethelehem company, were considered the most satisfactory, and the conclusion was reached that two important results had been achieved:—First, a better plate of American manufacture had been produced than the navy department was able to purchase abroad the year previous; second, the development of a new principle in

the manufacture of armour, of American origin, which, there were good grounds for believing, would furnish greater protection to the vital parts of a vessel of war than any other system hitherto employed.

While the foregoing tests were considered very conclusive, the navy department decided to make still another trial before finally adopting the Harvey process; and in the latter part of 1891 two more 10½-inch nickel steel plates were ordered from the Bethlehem company, both of which were treated by the Harvey process and tempered by an improved method. These two plates differed in one respect, namely, the first having been forged to 12½ inches, and, after supercarburization, being further reduced by forging to 10½ inches; the second plate was forged to final dimensions, that is, to 10½ inches, before Harveyizing. The chemical and physical properties of the plates before treating were the same. These plates were tested at Indian Head on July 23, 1892, under precisely the same conditions as those of October and November, 1891, and established not only the value of the Harvey process, but also that of reforging after supercarburisation, and it was determined that thereafter all armour for the United States navy should be so treated.

Improvements in manufacture followed from time to time, and the so-called Harveyized plates held the lead in all countries until a modification of the process was made at the Krupp works, in Germany, in 1895. The first important mention of the new Krupp process dates from the test of a 11.8-inch plate at the company's proving ground at Meppen on September 15, 1895. From published statements, the plate above referred to showed unusually good ballistic qualities and such immunity from cracking that it was referred to as the champion thick experimental plate.

The principal British manufacturers acquired the process, and in 1897 Messrs.Vickers, Sons & Maxim, Ltd., of Sheffield, presented for official test an 11 11-16-inch and a 6-inch plate, both of which gave excellent results and fully bore out the reputation which the new Krupp process had attained in Germany. Other British manufacturers presented plates made by the new process, and the superiority of the new armour was

so fully established that its adoption became an assured fact. It became merely a question of the ability of the manufacturers to produce it, as its manufacture necessitated extensive alterations in the then existing armour plants.

The American armour manufacturers, having acquired the rights to use the new process, submitted, in July, 1898, the first Krupp plate manufactured in the United States, the credit for so doing belonging to the Carnegie Steel company, and in October of the same year the Bethlehem Steel company also submitted an experimental plate, both companies following with second plates. The tests of these plates showed their excellence, and also that the American manufacturers could produce armour by the new process equal to that made abroad.

The Krupp process is, in fact, an improvement on the Harvey process, and the alloy used is referred to as nickel-chrome, as both of these metals enter into its composition. The supercarburization of armour plates made by the Krupp process, is produced either by means of a hydrocarbon gas or of solid carbonizing materials, such as are employed in making the Harveyized plates. Krupp plates are not only tougher and more resisting than Harveyized plates, but they have the peculiarity of not cracking under heavy impacts. This is a matter of great moment. The superiority of armour plates manufactured by the Krupp process is more apparent in the case of thick plates than in thin ones, and it is an open question whether in plates of not over 5 inches in thickness the Harveyized plates are not equally as good. The American armoured ships now building and those about to be commenced will all carry Krupp armour for all plates over five inches in thickness, and possibly for some of the thinner plates.

For a number of years the cost of armour plate has been under discussion by both houses of congress, and various restrictions were imposed, which led to many complications and delays in the completion of vessels under contract; but the act of June 7, 1900, provided, "That the secretary of the navy is hereby authorized to procure by contract armour of the best quality for any or all vessels above referred to, provided such contracts can be made at a price which, in his judgment, is

reasonable and equitable; but in case he is unable to make contracts for armour under the above conditions, he is hereby authorized and directed to procure a site for, and to erect thereon, a factory for the manufacture of armour; and the sum of four million dollars is hereby appropriated towards the erection of said factory."

Under the above provisions the secretary of the United States navy, after public advertisement and prolonged negotiations, made contracts for 37,184 tons of armour, more or less, covering all the armour required for vessels authorized for which no provision had been previously made. The amount of armour previously ordered amounted to 35,773 tons, so that the total quantity of armour ordered for the ships of the new American navy since July 1, 1887, amounts to 72,957 tons.

The following list shows the vessels to which this armour has been, or will be, applied, and the kind of armour carried by each:—

Amphitrite.—Double turreted monitor, 3990 tons displacement. Nickel steel, not face hardened.

Miantonomoh.—Double turreted monitor, 3990 tons displacement. Compound, not face hardened.

Monadnock.—Double turreted monitor, 4005 tons displacement. Nickel steel, not face hardened.

Terror.—Double turreted monitor, 3990 tons displacement. Nickel steel, not face hardened.

Puritan.—Double turreted monitor, 6060 tons displacement. Nickel steel belt, and nickel steel Harveyized turrets.

Monterey.—Double turreted monitor, 4084 tons displacement. Nickel steel, not face hardened.

Maine.—Second class battleship, 6648 tons displacement. Nickel steel Harveyized.

Texas.—Second class battleship, 6315 tons displacement. Belt nickel steel Harveyized; turrets nickel steel, not face hardened.

New York.—Armoured cruiser, 8200 tons displacement. Nickel steel, not face hardened.

Brooklyn.—Armoured cruiser, 9215 tons displacement. Nickel steel Harveyized.

Indiana.—Battleship, 10,288 tons displacement. Nickel steel Harveyized.

Massachusetts.—Battleship, 10,288 tons displacement. Nickel steel Harveyized.

Oregon.—Battleship, 10,288 tons displacement. Nickel steel Harveyized.

Iowa.—Battleship, 11,340 tons displacement. Nickel steel Harveyized.

Kearsarge.—Battleship, 11,525 tons displacement. Nickel steel Harveyized.

Kentucky.—Battleship, 11,525 tons displacement. Nickel steel Harveyized.

Alabama.—Battleship, 11,565 tons displacement. Nickel steel Harveyized.

Illinois.—Battleship, 11,565 tons displacement. Nickel steel Harveyized.

Wisconsin.—Battleship, 11,565 tons displacement. Nickel steel Harveyized.

Maine.—Battleship, 12,500 tons displacement. Krupp chrome nickel.

Missouri.—Battleship, 12,500 tons displacement. Krupp chrome nickel.

Ohio.—Battleship, 12,500 tons displacement. Krupp chrome nickel.

Arkansas.—Single turreted monitor, 3214 tons displacement. Nickel steel Harveyized.

Nevada.—Single turreted monitor, 3214 tons displacement. Nickel steel Harveyized.

Florida.—Single turreted monitor, 3214 tons displacement. Nickel steel Harveyized.

Wyoming.—Single turreted monitor, 3214 tons displacement. Nickel steel Harveyized.

Pennsylvania.—Battleship, 15,000 tons displacement. Krupp chrome nickel.

New Jersey.—Battleship, 15,000 tons displacement. Krupp chrome nickel.

Georgia.—Battleship, 15,000 tons displacement. Krupp chrome nickel.

Virginia.—Battleship, 14,600 tons displacement. Krupp chrome nickel.

Rhode Island.—Battleship, 14,600 tons displacement. Krupp chrome nickel.

West Virginia.—Armoured cruiser, 13,800 tons displacement. Krupp chrome nickel.

Nebraska.—Armoured cruiser, 13,800 tons displacement. Krupp chrome nickel.

California.—Armoured cruiser, 13,800 tons displacement. Krupp chrome nickel.

Maryland.—Armoured cruiser, 13,400 tons displacement. Krupp chrome nickel.

South Dakota.—Armoured cruiser, 13,400 tons displacement. Krupp chrome nickel.

Colorado.—Armoured cruiser, 13,400 tons displacement. Krupp chrome nickel.

St. Louis.—Protected cruiser, 9700 tons displacement. Nickel steel Harveyized.

Milwaukee.—Protected cruiser, 9700 tons displacement. Nickel steel Harveyized.

Charleston.—Protected cruiser, 9700 tons displacement. Nickel steel Harveyized.

In addition to the foregoing, a number of vessels of less importance, such as the Olympia, Cincinnati, Marblehead, and others, carry a certain amount of armoured protection in the shape of gun sponsons made of comparatively thin nickel-steel plates. There is little doubt that further improvements will continue to be made in the quality of armour plates, but what the nature of such improvements will be it is impossible to say at this time.

ENGINEERS IN THE UNITED STATES NAVY.

BY GEORGE W. MELVILLE.

[George Wallace Melville, engineer in chief, U. S. N., with rank of rear admiral; born New York, January 10, 1841; educated at Brooklyn polytechnic institute; became assistant engineer in navy, July 1861; served through the Civil war and later at several stations and at navy yards; has made three Arctic voyages; gold medalist, and advanced by special act of congress fifteen numbers, September 1890, for bravery in Arctic; appointed engineer in chief of navy, August 1887, reappointed January 1892 and January 1896; rear admiral from March 4, 1899; retired 1903. Author, In the Lena Delta, etc.]

Ever since the passage of the personnel bill I have contended that the measure of success to be secured from the law would be altogether dependent upon the manner in which it was interpreted. It was certainly the expectation of congress, and also of the personnel board, that the status of engineering in the navy would be advanced by this law. In fact, the controlling influence which made possible the passage of the bill was expressed by the then assistant secretary Roosevelt when he stated that "Every officer on a modern war vessel has to be a fighting engineer." This statement so succinctly stated the fact that it received the widest approval as soon as it was published. The reason for its ready acceptance was because thoughtful men had for a considerable time previous recognized the present as an age of engineering. Particularly in respect to naval matters had the public at large come to the conclusion that the modern battleship is a floating fort filled with complex machines, whose efficient care and maintenance can be intrusted only to a trained mechanical force, and the best efforts of this force can be obtained only when directed by trained officers. This applies to every department of the ship, and is only more applicable to the engineer department because that department comprises not only the most important, but the greatest number of mechanical appliances.

I am simply stating a fact when I assert that the number of trained and expert engineers in the navy is being steadily reduced. The practical working of the amalgamation scheme thus far has been, in great part, to take the junior half of the old engineer corps and transfer them to line duties. Individ-

ual officers of the old line have conscientiously striven to perfect themselves in engineering duties, but up to the present time no systematic measures have been taken to train officers for the engineering needs of the future. The work is too important and the needs of the future too great to depend upon individual effort to secure sufficiently numerous and trained officers for such duties. Herein has been the radical weakness of the system that has been pursued since the passage of the bill.

The failure to establish systematic methods for maintaining engineering efficiency was anticipated by earnest friends of the navy during the discussion attendant upon the passage of the personnel bill. When the subject was being investigated, the question was raised of how officers trained in engineering duties were to be obtained under the amalgamation scheme. The positive assurance was given that this was provided for by alternation of duty between deck and engine room. The point was then raised—Why should it not be specifically stated in the bill that this alternation must take place? The answer to such question was that this was a detail which could best be carried out by departmental order or regulation. The sincere advocates of the measure believed that it would not be best to limit the department by specific operation of law. As the proposition was one which had been indorsed by the secretary, and even commended by the president, it was presumed that the whole influence of the navy department would be exerted in improving the status of engineering. It was certainly expected by the naval committees of the house and senate that the department, by regulation, would provide for the engineering needs of the future; otherwise this need would have been carefully taken into consideration in the framing of the measure.

It may be urged that the work of the navy has greatly increased since the passage of the personnel bill, and that there has been an adequate number of officers available for all kinds of duty.

This is a fact; but for every three commissioned officers taken from the engine room and transferred to deck, only one commissioned officer from deck has been sent below. This

does not completely describe the extent of the depletion in the engine room supervision. The officers sent from the engine rooms were transferred to the deck for permanent duty, while in most cases the junior officers transferred from the deck have done engine room duty only for short periods. In explanation, it has been stated that 100 warrant machinists have been appointed and detailed for engine room duty. It must be remembered that all these warrant machinists came from the enlisted force in the engine rooms and had very little experience in handling large bodies of men. Without detracting, therefore, from the merits and capabilities of the warrant machinists, they are not altogether fitted by previous training or experience to take charge of an important department of the ship. Their successors, in many instances, were petty officers whose experience at sea was very limited. The gain in the engine rooms from this source has thus been more apparent than real. If, however, warrant machinists are competent for such duty, it may be pertinent to inquire why the boatswains and gunners, who are also warrant officers, are not equally competent to carry on the routine deck duty. Such an arrangement would permit some of the junior officers of the line to receive engineering instruction, even if it were not deemed desirable that they should render service beneath the protective deck. In the British service boatswains and gunners carry on such deck duty on small ships, and it is to be presumed that American warrant officers would also be competent for the task if such assignments were made.

As a result of this inadequate supervision in the engine rooms there has been a perceptible decrease in the efficiency of the machinery and a progressive increase in the cost of repairs. Definite data on this question are difficult to secure, since this retrogression is progressive in character, and the full extent of the evil cannot be determined without searching investigation. The condition of the machinery of the torpedo boat flotilla shows the trend of affairs.

During recent years the disablement of torpedo boats has been of such frequent occurrence that the majority of the boats have been under repair a great part of the time. Many of these mishaps are serious in character, and the present con-

dition of the flotilla affords an incontrovertible argument in favor of the proposition that practical engineering ability of high order is required for their successful care and operation. In my opinion, the machinery of the torpedo boat craft would not be in its present deplorable condition if engineer officers of experience had been detailed for supervisory duty in connection with the boats.

It is strikingly significant that the decrease in machinery efficiency has been most marked in the case of the torpedo boats. With this type of craft it has been attempted to practically maintain the machinery in operation without the supervision of trained engineer officers. With such a system in operation it is not surprising that inefficiency should be the rule. Upon official trials the builders of such boats find it necessary to fill the engine rooms with supervising engineers of ability and experience, who command high salaries. After such boats are turned over to the government it cannot be expected that an insufficient and unskilled force will be capable of operating them. The depreciation of the boats will take place at a rapid rate if either an inadequate or inefficient personnel is to be intrusted with their care and maintenance.

That efficiency beneath the protective deck is no less important in naval warfare than efficiency above it cannot be doubted. The boiler plant is the heart of the vessel, and any weakness in that direction will be followed by general decline everywhere else. The difference between an efficient and inefficient force on board a warship was shown at the battle of Santiago. The crowning act of that victory was the overtaking of the Colon by the Oregon. In this chase a battleship of 16 knots speed, manned by an efficient engine room force, overtook a 20-knot armoured cruiser whose motive power was inefficiently handled, since only about one half the boiler power was developed on board the Colon that could have been secured by a skilled force of mechanics and firemen directed by a trained and educated complement of engineer officers.

The bureau has reason to eventually expect efficient service from the young line officers sent to engineering duty if such junior officers are made to understand that promotion awaits only those who qualify in this direction. The greatest

good that must come from such details will be manifest in the future.

It can not be expected that immediate results will be secured from this change in the future engineering training of the naval personnel. Satisfactory progress can be secured only by development. The experience of the cadet engineer system, whose abolishment can not be too deeply regretted, showed that a perfected system of training engineer officers could be secured only by progressive experience and observation. Although the system was established at the naval academy in 1866, it was fifteen years from that time before a satisfactory course of instruction had been outlined that was in keeping with the needs of the service. It will require time also to perfect the present system.

As the paramount purpose of these details must be to secure an engineering personnel for the future, I strongly advise that a large contingent of the junior officers be sent to the various navy yards and to other stations where engineering instruction and experience can be secured. These junior officers should be detailed for engineering work exclusively. If additional duty is assigned by other bureaus, it cannot be expected that competent officers for engineering work can be adequately trained. This is not a question of specializing along engineering lines. It is rather a question of preventing inefficiency and demoralization existing in the future. Those undertaking this work must be impressed with the fact that there are unpleasant as well as attractive features in qualifying along every line of work. Any system of training which will permit the unattractive and difficult features to be avoided will make for future inefficiency.

When the personnel law went into effect the United States had an engineering corps that was recognized as the equal, if not the superior, of that possessed by any other naval power. This efficiency had been secured because the junior officers of the old engineer corps had been taught the lesson that to attain success much disagreeable work had to be done and many unpleasant duties performed. Those who are to succeed to the duties of the old engineer officers must be taught the same lesson of interesting themselves in the difficult as well as

the attractive work of the profession. The deep seated prejudice that existed in the navy against engineering duties has not altogether been eradicated, and from this cause it will be a difficult matter to create the interest and enthusiasm in this work that can be secured from more congenial and conspicuous assignments. It may not require much persuasion to induce many junior officers to acquire a superficial knowledge of engineering principles. It will need determined action, however, to compel a number sufficient for the engineering needs of the future to qualify to a degree that will make them proficiently capable of performing this important duty.

The success achieved in the past cannot be repeated unless the same pride and interest in engineering work are taken by those detailed in the future to this duty. The necessity for looking ahead being recognized, the practical problem arises as to what details of policy are essential for such success.

It has been said that the exposition of a military weakness can be justified only by suggesting remedial measures. In order to improve existing conditions, as well as to provide for engineering necessities of the future, the following recommendations are urged:—

1. That the policy lately inaugurated of detailing junior officers of the line exclusively to engineering duties be greatly extended.

2. That a post graduate course of instruction in marine engineering and design be established at the naval academy for those junior officers of the line who desire to familiarize themselves with marine engineering.

3. That at least two war vessels be used in part for the general training of firemen.

In the British navy the training of stokers is systematically carried on in the cruisers Northumberland, Nelson, and Bellerophon, vessels of 10,000, 7,600 and 7,500 tons, respectively. In these ships the stoker is taught that he has not only hands to use, but a mind to employ. After a course of instruction the recruit has a better chance of becoming, for naval purposes, not only a handy man, but a reasoning creature. Such an eminent authority as Lord Brassey recommends that the modern armoured cruisers Powerful and Terrible, ships of

14,000 tons displacement and 25,000 horse power, be employed for the special training of the engine room complements of British warships.

Fighting ships even are looked upon by the British admiralty as desirable for the training of sailors. It has been officially announced by Lord Selborne that the squadron of training ships will not be resuscitated. Instead of developing the sailor lads on the royal yards, it is proposed that they be sent to sea in fighting cruisers. This significant action by the British admiralty shows the trend toward mechanical training for the entire ship's force.

4. That several torpedo boats be kept in commission for the training and instruction of the machinists and water tenders of the torpedo boat service.

5. An urgent necessity has arisen for the training for naval duties of the youthful and inexperienced machinists enlisted in inland cities. These young men can be induced to seek a life career in the navy if some substantial recognition is accorded faithful, efficient, and continuous performance of duty. The number of chief machinists now in the navy is simply inadequate for existing needs, and a sufficient complement can be secured only by giving the machinists, second class, a systematic and thorough course of instruction so as to make them familiar with the care, operation, and repair of the various auxiliaries used in the naval service. These auxiliaries include capstan, blower, and winch engines, evaporators and distillers; refrigerating, hydraulic, and pneumatic machinery; also the simple forms of electric motors. These machinists should be instructed as to the manner of making all kinds of joints used for high pressure purposes, the method of packing various forms of stuffing boxes, and, in general, the manifold duties that must be performed in the engine department of a modern warship.

It would be extremely advisable to send all machinists, second class, to a navy yard for practical work on ships under repair for several months. The experience and knowledge that they would gain from this experience would make them more efficient for duty on board ship, and the navy would be the gainer from having such men trained, in great part, at a

navy yard where the diversity of work on repairs would develop all who had an aptitude for a naval career. If such a course of instruction be provided, it can be confidently predicted that the corps of warrant machinists can be recruited from this source alone.

As it is not probable that all the deserving machinists can from now on expect to secure warrant rank, I would urgently recommend that all machinists among the enlisted force who have served honourably for a period of twenty years be assigned to duty only at navy yards. There is much duty that these men could do at the naval stations, such as running tugs, taking charge of the steam fire engines, looking out for the various boiler plants, and taking charge of the machinery of the ships in ordinary.

Under existing conditions, machinists remain only long enough in the service to fit themselves for taking positions in the merchant marine. They are lost to the naval service just when they are most efficient, and such a deplorable state of affairs should be remedied, if possible. I believe that the department has only to offer some substantial reward in the form of permanent duty at a navy yard to induce many machinists to render twenty years' faithful service, and to look upon the navy as a life career, and not as a temporary vocation which affords an opportunity for travel and sightseeing.

6. That the warrant machinists be placed upon the same footing as regards pay, and rank, and emoluments as given other warrant officers. In some respects the warrant machinists are discriminated against, and so long as this distinction exists they will have a grievance which must interfere with the efficiency of the engine room force. Every avenue to promotion and increase of pay that is accorded other warrant officers should be given warrant machinists. The responsibility and character of the duty that rests upon this class of officers is as important as that devolving upon sailmakers, carpenters, boatswains, and gunners, and the opportunity for advancement should be equally as great.

7. That a special rate of pay be allowed those petty officers in the engine department who qualify as water tenders of torpedo boats. Such a substantial reward is given those

who qualify in certain deck duties, and the same inducement should be held out to the leading petty officers doing duty beneath the protective deck.

In connection with this subject of personnel there are features whose importance should be impressed upon the service at large. It is a certainty that the number of officers doing engineering duty only, will diminish much more rapidly than is anticipated, and probably much sooner than is desired. By reason of the present interpretation of the personnel law the inducements for such officers to continue this work are very few. As attractive retirement features of the personnel law will soon be applicable to the majority of such engineer officers, it can be expected that the opportunities offered will be taken advantage of by many who are now doing engineering duty only.

It would also be well for thoughtful naval officers to compare our work in training an engineering personnel for the future with efforts that are being made by other naval powers. Is the engineering course at Annapolis comparable with that given the British engineering cadets at Keyham? Are we in advance or behind other nations in systematically training the petty officers and stokers of the engine room force?

The warships of the future must be provided with a strong complement of commissioned engineer officers. The number and character of the enlisted force working beneath the protective deck, as well as the extent and complexity of the motive power, demand and require that there be detailed, for this supervision, a complement of educated officers possessing ability and high character. Either the junior officers of the line must be compelled to take up this work, or public sentiment will demand that the warrant officers be advanced to official positions commensurate with duties imposed upon them.

LIFE AND STUDY AT THE NAVAL ACADEMY.

BY WALTER G. RICHARDSON.

[Walter Gates Richardson, retired ensign United States Navy; born in Illinois; entered the United States Naval academy at Annapolis Sept. 22, 1876; being appointed from Massachusetts; retired June 22, 1889 with the rank of ensign; is in charge of the branch hydrographic office at Boston; has written a number of articles on naval topics for periodicals.]

John Paul Jones was not a graduate of the naval academy, and there is no reason to suppose that his services to the country would have been any more important than they were, had he been. What the country needed at that time was a brave, fearless, dashing seaman, fertile in expedients, ready to meet overwhelming odds bravely, and skillful to cope with them. All this John Paul Jones was. The requirements of the naval service of his day are thus set forth by him:

"None other than a gentleman, as well as a seaman, both in theory and practice, is qualified to support the character of a commissioned officer in the navy; nor is any man fit to command a ship of war who is not also capable of communicating his ideas on paper, in language that becomes his rank."

These are to the needs of to-day as the Bon Homme Richard to the Chicago. The necessity of a suitable institution where officers could be properly trained and educated for the naval service led to the founding of the naval school. It was founded in 1845 on a small military post, Fort Severn, transferred for that purpose to the navy department, George Bancroft being secretary of the navy at the time. Old Fort Severn, a circular structure of stone, is now used as the academy's gymnasium, and is crowned by a wooden building to adapt it to that end.

The idea of the academy has always been to have the course cover a certain number of years devoted to academical study, and other years for service and instruction afloat in regular sea going vessels of the navy. The number of years given to each has been changed from time to time. When the naval school, as it was called at the first, was founded, the course was five years, of which the first and last only were

spent at the school, the intervening three being spent at sea. At present, the course is six years in length, the first four being spent at the academy and the last two at sea.

Students are trained by a method which the peculiar character of the institution makes necessary. We should think it strange indeed if Harvard college could have but one, or at most two students, from Boston; yet that is the state of the case at the naval academy. One cadet is appointed for each congressional district, one for each territory and the District of Columbia, and ten at large; those at large and for the District of Columbia are appointed by the president, the others by the congressmen. This gives a maximum number in the corps of cadets at present of 649. Theoretically these appointments come but once in six years; but many an unfortunate cadet, unable to keep up in the race, drops out, and his congressman has to appoint another to fill the vacancy. From 1866 to 1882, a corps of cadet engineers was also educated here; twenty five were admitted each year, making the maximum strength of the corps of cadet engineers one hundred. Cadet midshipmen and cadet engineers pursued the same course for two years and then the technical and professional branches suitable to each were taken up separately. Cadet engineers were given permits by congressmen to appear for examination for admission, and the twenty five passing the best examinations were admitted. In 1882, a powerful but unwise congress undertook the reorganization of the personnel of the navy. One of the measures adopted was the abolition of the cadet engineers, calling the cadet midshipmen naval cadets, and providing that the vacancies in the line, engineer, and marine corps should be filled from the graduated naval cadets—those not needed for this purpose to be discharged with one year's pay. The manifest impossibility of cramming into two years the technical course devoted to engineering, and that given to the professional education of the line officer, each of which had required every day of two years, resulted in a modification of the engineering course, so that the graduates were really line officers with a superficial knowledge of engineering. This was far from satisfactory, and attempts have been made to have this remedied by congress; at present,

at the end of the third year a certain number of the cadets are assigned to the engineer division, and are given a technical course in engineering. This is better than the method that existed for the few previous years.

The naval academy grounds consist of about fifty acres along the Severn river, walled in on two sides and bounded on the other two by the river and harbor front. There are also one hundred and sixteen acres belonging to the institution, recently included within the walls; but it is with the former that we are concerned. In this enclosure we have a unique community, having its residences for officers and cadets, hospital, church, cemetery, library, lecture hall or theater, laboratories, workshops, model and recitation rooms, ships,—both sail and steam, boats, gas works, fire department and steam fire engine, bakery, laundry, gymnasium, armory and drill rooms. In fact, here one can live in perfect comfort, every want supplied, without a thought for the world outside the academic walls. The world within is a very attractive one. The buildings, grounds, walks and drives are kept as neat as wax; nowhere is the grass so green, the shade so pleasing, the sun so bright, the music so sweet, as in the grounds of the naval academy on a fine morning in May.

So thinks, possibly, a candidate for admission, as he enters the gate with his appointment in his pocket. As he takes a parting glance at the picture behind him, he sees the graceful dome of the capitol of Maryland rising at the end of the street down which he has just come. He turns his back on the state, acknowledging that the federal government has the greater charms for him. He has a heart filled with ambition to do or die in the service of his country, and a head filled with rules of arithmetic, algebra and grammar, and facts geographical and historical for the examination which he must pass before he begins to do or die. Many have preceded him with the same resolves, but have neither done nor died; for their services have been declined by a heartless government because of insufficient knowledge on some of the subjects prescribed.

It is becoming a not uncommon thing, especially in the northern and eastern states, for the congressman having an

appointment to the naval academy to dispose of to give it to the boy who passes best in an open to all examination. This is a good plan, as the smartest boy gets the chance. This saves a good many disappointments to boys who might be able to persuade their congressman to give them appointments, but who are utterly unable to pass the entrance examinations; and the percentage of such appointees who enter and successfully complete the course is far larger than that of those who are appointed without the competitive examination.

The government pays the traveling expenses of the successful candidates, and requires a deposit of about $190 to pay for clothes and books needed immediately. Many a boy takes the examination with the firm conviction that if he can pass he will thereafter stand one in his class; but, strange to say, there is only one number one in each class. He thinks that his trials will all be over once that examination is passed; but, alas! he finds they are only begun. There is no inscription on the simple iron gates through which he enters the naval academy. They might well bear the admonition, "Leave idleness behind all ye who enter here"; for certain it is that only by constant application and industry can the student succeed. He has entered a new world, where his hours of going and coming, of rising and retiring, are controlled by a bugle note; his dress, recitations, studies, manner of walk, hours of meals, in fact, every moment of his day are governed by strict rules; even his slang is different from that of the world at large, and has an odor of tar and a smack of salt water.

Cadets are admitted between the ages of fifteen and twenty,—changed recently by act of congress, the ages before having been fourteen and eighteen; and examinations for admission are held in May and September. As soon as the examinations are over, the successful candidates—now become cadets of the fourth class—are put to work drilling. If they enter in May they go on the summer cruise; if in September, they are soon at work at their books. The academic year begins October first and lasts until June tenth; it is divided into two terms of four months each. The studies are so arranged that each cadet has three daily recitations of one hour

for five days of the week, and one on Saturday for part of the year; there are five hours daily reserved for study, during which the cadets remain in their rooms; besides these hours a cadet can snatch a few moments here and there through the day to turn to account in his studies, if he needs to do so. The course of study is as follows:

First Year.—Algebra, geometry, English and history, French, Spanish, and German.

Second Year.—Trigonometry, descriptive geometry, analytical geometry, physics, chemistry, English and history, French, Spanish, German, mechanical drawing.

Third Year.—Differential and integral calculus, mechanics, physics, marine engines and boilers, astronomy, French, mechanical drawing.

Fourth Year.—Line division: seamanship, naval construction, naval tactics, ordnance and gunnery, infantry tactics, international law, navigation, surveying, mechanics and strength of materials, physics, physiology and hygiene.

Fourth Year.—Engineer division: naval construction, steam engineering (including marine engines, boilers, fabrication, and designing machinery), physics, chemistry, mechanics and strength of materials, physiology and hygiene.

The work of instruction is divided among eleven departments:

Seamanship, naval tactics, and naval construction; ordnance and gunnery; astronomy, navigation and surveying; steam engineering; mathematics; applied mathematics and mechanics; physics and chemistry; English studies, history and law; modern languages; mechanical drawing; physiology and hygiene.

Each department of instruction is under the special charge of an officer, generally an officer of the navy designated as the head of the department, who is assisted by other officers as instructors. The number of assistants in each department is from three to seven, the total number at present being fifty two, of whom forty one are naval officers. Altogether there are eighty six officers and civilian instructors attached to the academy, although this is not a fixed number. The head of each department has an office, and in the cases of many

departments there are buildings devoted to their special use, as the physical and chemical laboratories, the seamanship and steam engineering buildings. Officers sent to the academy for duty in any of the departments are selected with a view to their special fitness for work in that particular department, so that the instruction is of the very best. Having been through the course as cadets themselves, the officers know the needs of the cadets, the aims of the course, the traditions of the academy, and what the good of the service demands. With strict impartiality in the marking of recitations and papers, there is a tendency to give the benefit of the doubt to the cadet. But the high sense of justice by which the officers are actuated requires that a vigilant watch should be kept on the interests of the service, and that no improper or poor material be admitted to the personnel.

Instruction is mainly given by recitations from prescribed text books and by practical work in laboratories and workshops. The naval academy is pre-eminently a school of application,—one of the first, if not the very first, established in this country. Here practice follows fast on theory. For recitations the classes are divided into sections of ten or less cadets, each section having its instructor, who assigns marks to each cadet for each recitation on a scale ranging in tenths from zero to four: a mark of 2.5 represents the minimum of proficiency.

At the end of the month the cadets are examined in each subject on the work of the month, and the examination marks are combined with the average of the marks given by the instructors, to determine the cadet's monthly standing in the subject. At the end of the term similar examinations are held on the work of the term, and the marks for these examinations, combined with the monthly averages, determine the standing of the cadet for the term or year. Cadets whose final average in any branch for a term or year falls below 2.50 are considered deficient, and are liable to be dropped from the academy. The entrance examination and all other examinations are written.

The method of daily recitations is as follows: The lesson having been assigned the previous day, the cadets come to the recitation room, supposed to have mastered the subject matter

of the text. It may be noted here that all movements of cadets through the grounds or from one room to another in the same building (except during recreation hours) are made in military order, one of the cadets being in charge of the section or division, and having authority to enforce obedience to his orders. The section is marched to the recitation room, and after a military report by the cadet in charge to the instructor, the latter proceeds at once with the work in hand. In such subjects as algebra and geometry the recitations are principally made at the blackboard in the development of formulæ, demonstration of propositions, or application of principles of the text in suitable problems. In subjects like history and rhetoric the recitations are sometimes oral and sometimes written on the blackboard, when they are corrected for style, grammar, punctuation, spelling, choice of words, and other faults, as well as for mistakes in facts. Explanations of difficult portions of the text are liberally made by the instructors both before and after the cadets have studied them; but the cadet is expected to master the text before coming to recitation, and, a subject being assigned him to recite upon, he works out his own salvation. Thus it will be seen that a cadet's success depends on the diligence he has acquired and the intelligence he was born with. No college or school in the country of an equally high grade has a system by which the student gets so much personal instruction as this; the smaller number of cadets in the section enables the instructor to give liberal time to each. This is a necessity, as it would be difficult otherwise to attain the proficiency that is required; for the course is very extensive and the time about the shortest in which it is possible to get over the ground. Consequently, a student must understand the subject when it comes in the course, or he will hardly be able to make it up. Lost ground is very hard to regain, and every day brings a new lesson and a new subject. Where lectures are employed, they are used to amplify or explain matter treated of in the text books, or are in the nature of practical exercises,—as, for example, French lectures and readings.

Every student follows the same course,—that is, the number of recitations and the subjects of study are the same

for each cadet of any one class. In some cases the best students are permitted to take an advanced course in addition to the regular work, but this is only allowed in cases of marked ability. In general, the studies of the course are enough to keep the time and energies of the average cadet fully occupied. While colleges and technical schools of course offer to their students opportunities of advancing farther in any one branch of knowledge than can be done here, none requires as much as does the academy; very much less study and knowledge than is necessary here would graduate a young man from any of our colleges or technical schools. The standard should be high because of the needs of the service, and it can be made and kept high, since the life and prosperity of the institution do not in the least depend upon the number of graduates.

The branches taught are many and the knowledge obtained by the cadets in each branch is thorough. It is not claimed that every cadet graduated is a specialist in every branch he has studied, or that he has pursued any one study to the end; but he has a good knowledge of the subjects, and that considerably beyond the elementary principles. In the third year, as noted above, we find among other branches studied, physics and mechanics. The instruction in physics extends over the year, and the following program gives a general idea of the work done in the first term: recitations on simple harmonic motion; wave motions, sound, light, and heat; practical work in the physical laboratory, comprising experiments illustrating the daily recitations, and some exact measurements, such as the determination of the candle power of gas and electric lights, index of refraction of glass prisms, lenses and liquids, focal length of lenses, length of light waves; photography; and in addition a short course in chemical analysis. During the second term the recitations in light and heat are concluded, and electricity and magnetism are commenced. The practical work in the physical laboratory consists of calibration of thermometers, determination of the hygrometric state of the atmosphere, measurements of the coefficients of expansion and the specific and latent heat of various substances, other experiments illustrating the course of study and leading to the skillful use of instruments of pre-

cision, general experiments illustrating the phenomena of statical and voltaic electricity, setting up and comparing galvanic cells and secondary batteries, measuring their resistance and electromotive force, calibration of galvanometers, determination of dip and horizontal intensity. In mechanics, taken up in the second term, the subjects treated are: kinematics, dynamics, kinetics, hydromechanics, the motion of projectiles, friction and other resistances, the application of mechanical principles to simple machines and to instruments. The greater part of the academical course, particularly in the departments of mathematics, modern languages, physics and chemistry, and the professional branches, is thorough, as in the examples above, although the short time given makes it necessary that the treatment of some subjects should be less thorough than might be desired. Such is the case in history and literature, physiology and hygiene, international law, and a few other subjects. Yet in the subject of history, in the fourth class (first year) Swinton's Outline of the World's History is completed in the first term and Green's Short History of the English People, in the second. While not being as much of a course as could be desired for a general education, it is sufficient for the technical one here given, and gives a good ground for future reading, especially as the examination for admission requires a pretty thorough knowledge of American history.

It will be seen that the application in the laboratory of principles studied in the text books is at once made, so that a working knowledge goes along with the theoretical; and it may be mentioned that the course on electricity and magnetism, which extends through the first term of the fourth year, is a very complete one, giving much theoretical and practical instruction in these important branches. The scope of all departments is continually increasing. Especially is this the case with those treating of ordnance, ship building, electricity and magnetism, marine engines and deviation of compasses. Compare the treatment of any of these subjects twenty years ago with their treatment to-day and it will at once be seen what immense progress has been made in them. It is imperative that the naval officer should be abreast of the times, and every

endeavor is made to keep the course up to the discoveries and inventions of the day.

Particular attention is given to the practical work in all the departments. The cadet on finishing a text book is not merely a master of the subject of the text, but has actually applied the principles. As stated before,—and too much stress can not be laid upon the fact,—this is essentially a school of application, and its graduates are proficient in more than theory.

From the examination of candidates for admission until the end of the fourth year the process of instruction is a weeding out. About sixty per cent of the candidates are admitted; while of those that enter, forty two per cent only are graduated. The greater part of those who drop out do so at the end of the first year. The figures need no explanation or apology; what the course requires and what the navy requires is brains; and the moderately or fairly intelligent lad will have to work hard to get through. On the other hand, from his entrance to the academy until the final examinations have been passed, six years later (after he has returned from a two years' cruise), the cadet is engaged in a competition with his fellows, keen, constant and honorable; for on his standing in his class depends whether he gets his commission as an officer or is relegated to the peaceful walks of civil life. If he stands high, he studies hard to stand higher, in order to take future rank above somebody else; if he stands between fifteen and twenty he studies hard to stand a little higher,—for while the law requires that fifteen cadets be commissioned each year, no more are taken into the service unless more vacancies have occurred in the line, engineer, and marine corps the preceding year. And the poor lad who finds it hard work to get the 2.5 necessary that he may remain, studies as hard as the rest. The education given by the academy is an expensive one, and a cadet who graduates has a thorough ground work that fits him for almost any scientific pursuit; the cadet knows this, and that his living for six years, a chance to see a little of the world on the two years' cruise, and an honorable discharge with $1,000, are to be obtained if he can only get that 2.5. Tecumseh, the figure-head of the old Delaware, is called the God of Two Five, and

silently views the cadets as they daily march by him to their recitations, and those struggling for a two five send a pleading look into his grim old face and try to tip their caps to him without being detected by their comrades. It is said that on nights before examinations flitting figures are sometimes seen here and mumbled orisons are heard, the last resort of the desperate, unsatisfactory cadet.

It is to be noticed that the study of the classic languages finds no place here. The mental drill given by their study is here obtained from mathematics, necessary in most of the professional branches. While the necessary studies so completely absorb the time as to preclude the possibility of introducing any such subjects as philology, metaphysics or political economy, desirable in a broad education, it must be admitted that for a technical course that of the naval academy is a very broad one. The time now devoted to the course is fully occupied, and more could be employed; though it is probably advisable that any addition to the course should be made later, after the cadet becomes an officer, in the form of a post graduate course, as is now done to a limited extent at the naval war college at Newport.

It may be said that the first two years are preparatory to the last two, in which are taken up all the technical and professional subjects; although the practical instruction in professional matters begins, in the shape of the many and varied drills, as soon as the candidate enters. Drills and exercises take place four days in the week, from 4:00 to 5:30 P. M. Wednesday afternoons from 4 o'clock to supper time, and Saturdays after 1 P. M. are given up to recreation. From March 10 to the end of the year the whole of Saturday morning, 8 A. M. to 1 P. M., is occupied with exercises on board ship while under way, seamanship and gunnery drills taking place in alternate weeks. The drills and exercises include the following:

School of the soldier, company and battalion; artillery with howitzers on shore and in boats; signals; mortar; great guns; torpedoes; machine guns; target practice with revolver, rifle, great gun, and machine gun; monitor under way; knotting and splicing; handling sails and spars; handling ships under way; fleet tactics under oars and under sails and with

steam launches; boat sailing; work in the machine shops, fire-room, and engine room; fencing with small and broad sword; boxing; swimming; dancing; and exercises in the gymnasium.

These drills, as will be seen, furnish physical exercise in great variety, and come at the right time in the day to relieve the fatigue resulting from six hours of study and recitation. With the exception of the last half dozen, they take place in the open air, except when stormy weather makes it necessary to have them in the armory or other drill room. All exercises are compulsory on all cadets, the sick being excused on recommendation of the medical officer on duty for the day. Gymnastics are compulsory during the first year, but optional thereafter; the annual exhibition of general gymnasium work shows results that are unexcelled in the country.

When the cadets are first admitted, they are of all degrees of awkwardness and clumsiness, as is to be expected from their rapid growth, youth, the lack of previous proper training in easy and graceful carriage. To them the drills at the start seem long and fatiguing, but they very soon become used to the different exercises, and he beneficial results are seen at once; gawkiness disappears, and in its place we see the straight, supple, graceful carriage, the sure result of a systematic military training. A searching physical examination is part of the entrance examination and of each subsequent annual examination, so that the cadets graduated are a set of picked men, mentally and physically. The regular hours for rising and retiring, the excellent physical exercise, and the plain, wholesome, substantial food taken at the age when youth is so rapidly developing into manhood can hardly fail to make fine physical specimens from selected material. The health of the corps is remarkable, there having been but few deaths since 1853—and several of these the result of accidents.

Another great help in the physical development of the cadet is the practice cruise. In fact, these cruises are very valuable in every way, giving three months of application in the professional branches. About June 12 of each yaer the cadets of the first, third and fourth classes are embarked upon the practice ship for the summer cruise, and the time until September 1 is spent at sea in the performance of practical

duties of seamen and officers, when the cadets do the work of handling sails, spars, boats and guns, and handle the ship under sail in the various evolutions, such as tacking, wearing, box-hauling, and chappeling. Throughout the cruise the cadets of the first class are given in rotation the positions of responsibility in charge of the different parts of the ship, as though they were officers. The Constellation has been for many years the practice ship, and her name alone inspires patriotic recollections of former naval prowess. On the return of the ship in September, the cadets disembark, brown as berries and tough as nuts, with a slight roll in their walk and a little more sea in their talk than previously. From September 1 to October 1, all except the fourth class are granted leave, and gladden the hearts of their relatives and friends—especially their young lady friends—by their manly appearance, their handsome uniforms, their accomplishments, their nautical talk, and their accounts of life at the naval academy.

During the summer, the second class, remaining at the academy, has been employed in the forenoons with work in the machine shops and in the afternoon with exercises in boats and at target practice with machine and great guns. Besides the Constellation, soon to be replaced by a modern steel steamer, Bancroft, there are at the academy the old sloop of war Santee, used for instruction in handling broadside guns; the Wyoming, a steel corvette, used for seamanship drill and great gun target practice; the Standish, an iron tug also used for target practice; the monitor Passaic, and the side wheel tender, Phlox. There are also twelve steam launches and the same number of cutters, by means of which the cadets are thoroughly instructed in the evolutions of boats under steam, sails, and oars.

The principles underlying the instruction at the naval academy are these: In order to command one must learn to obey; that one may know when a thing is properly done, he must know how to do it himself. The first lesson taught is unquestioning obedience to properly constituted authority and respect therefor. In the chapel are mural tablets, and scattered through the grounds are monuments to the memory of brave men, commemorating valorous deeds. With the

story of Cushing, Herndon, Mackenzie, and many others daily recalled by visible tokens it would be strange if there were not kindled a desire to emulate them, should occasion offer. Certain it is, that in the day of trial the graduate is not found wanting. To mention Samoa is to recall thrilling incidents and the actions of brave men who did credit to themselves, the service, and the country; and it is a matter of congratulation and pride that the naval cadets bore themselves in those perilous days like veterans.

The discipline is under the special charge of the commandant of cadets, an officer second in rank to the superintendent, who is assisted by four officers in executive duty. Infractions of regulations are punished by a system of demerits, the number being proportioned to the gravity of the offense, while extra punishments such as confinement on board the Santee, loss of privileges, or extra drill, suited to the offense, are given for the more serious breaches of discipline. A maximum yearly number of demerits is allowed a cadet, the number being decreased with each year of his stay; if a cadet receives more than the allowed number he is deficient in conduct, and liable to dismissal the same as if unsatisfactory in a study.

At the end of the year a standing in conduct is fixed for each class in accordance with the number of demerits received. The standing in each branch of study, in conduct, and in the summer's work are combined to form a merit roll for the year. In making up these merit rolls, the mark in each study is multiplied by a certain coefficient, constant for that study and class; from the sum of these products is subtracted for each demerit an amount that increases each year of the course, thus putting a premium on good behavior. By increasing the coefficient, important studies are given more weight than those of less importance. It will be seen from the maxima given below, that the importance of the course increases with each year, the fourth year having four times the weight of the first. When the cadets return from their two years' cruise at sea, they are examined in professional branches; and the result of this examination, combined with the merit rolls of the four years, gives the final standing of the cadet upon grad-

uation. The maxima for the different years are as follows:

First Year	76
Second Year	152
Third Year	228
Fourth Year	304
Academic Course	760
Final Examination	240
Entire Course	1000

Cadets rise at 6 A. M., and retire at 10 P. M. Of these sixteen hours, five are devoted to study and three to recitation, one and one half to drill, one and three quarters to meals, two to formations, and movements through the grounds, sweeping room, making bed, changing uniforms, etc.; leaving about two and three quarters for recreation, social intercourse and the other functions of life. The cadets are paid $500 a year, with an allowance of thirty cents a day called a commutation of rations, making the total pay $609.50. This is at the academy; at sea, after graduation, they receive $950 and the commutation of rations. While at the academy the cadet does not handle his own money; he is credited with his pay and debited with all expenditures, such as board, washing, clothes, books, etc.; but these expenditures are only made by written permission of the proper authority, so that, with the exception of a small monthly cash allowance, the chink of money in the pockets of the cadet is seldom heard.

Among other accomplishments all cadets are taught to dance; and the little hops on Saturday evenings and the large balls in January and June are pleasant occasions for all concerned, and serve to give the cadets that ease of bearing, knowledge of society, and polished manner which come from contact with le monde elegant. Music at these entertainments is furnished by the academy band, considered one of the finest in the United States. Band concerts are held for one hour morning and afternoon at the band stand, and there is one hour for practice in the gymnasium. In accordance with long established custom, the first selection played in the morning is the Star Spangled Banner, and the last in the evening Hail

Columbia; while all hops are closed by Home, Sweet Home, or the playing of taps on the bugle.

The library and superintendent's offices are in a building which was formerly the gubernatorial mansion for the state of Maryland. The library contains about 30,000 volumes, well selected with a view to the needs of the institution, having of course many works on professional subjects, books of reference, history, and travel; of light literature proper there is none, though a few standard works of fiction are on the shelves.

Whether the cadet at the end of his six years' course goes into civil life or gets a commission as an officer in the navy, he always looks back with pleasure to the years spent at the naval academy, and with love for his alma mater. The diploma that he received, showing that he had completed the four years' course, is a certificate that he possesses endurance, perseverance, and mental ability of no mean order. The hall mark is placed only on sterling silver.

THE NAVAL WAR COLLEGE.

BY HENRY WILSON.

[Henry Wilson, naval expert, is the author of many articles on the history of naval tactics and strategy and has written criticisms and expositions of naval engagements and naval wars. He has been a warm advocate of the Naval War college and with his pen has urged its support by congress.]

Problems of naval warfare are solved in times of peace by the officers of the United States navy at the naval war college at Newport, an institution which has had an important part in recent years in the perfecting of American naval officers in the art of war. Here are planned possible campaigns for use in attack on any power with whom war is possible and methods of defense are devised for the protection of our sea coast against the world's greatest fleets.

"The unique feature of the course here is what is known as the war game," explained Captain Chadwick in an address opening the session of the college a few years ago. "Here one finds out empirically into what sort of a situation he is likely to be precipitated in the event that war shall suddenly come upon us. It sets a man to thinking what he had better do about it.

"The sinking of Cervera's fleet was not the execution of a plan suddenly inspired. On the contrary, that memorable July forenoon saw wrought out that which in its beginnings, at least, was rehearsed, so to speak, in these halls. An incident that occurred not long after the close of the war serves to illustrate my meaning. Rear Admiral Sampson, happening to be here, saw suspended on the wall a large chart of the Cuban coast. It bore certain marks that denoted the movement of war vessels.

"The admiral took it to be a chart that had recently been prepared for the purpose of illustrating certain features of the Spanish war. It turned out, as a matter of fact, that he was looking at a working model that had been put to use two years

before the war, in the study of an imaginary campaign against Spain."

The game at the naval war college is conducted on that fallacious theory that all men are equal in courage and skill, and that God is on the side of the heaviest battalions. But every feature of actual war enters into the game, except blood and bullets and smoke, and it furnishes a valuable training which an officer can not obtain on board a ship.

The character and progress of the play is kept a secret for military reasons and to prevent misunderstandings, for sometimes the fleets of the United States are engaged with those of England, and again those of Spain; sometimes they win and sometimes they lose, and it would not be proper to let the public know how either happened.

For an example, the United States fleet may be engaged some day in protecting the north Atlantic coast from an attack from the fleet of Zanzibar. Certain officers represent the new sultan of that enterprising country, and direct the movements of the cruisers and battleships and torpedo boats just as if they meant business. Certain other officers represent the admiral of our navy, and direct the defense, while the president and the rest of the faculty of the war college are umpires.

It is assumed that when a cruiser or a battleship is caught by a vessel of greater tonnage and heavier guns she is whipped, and off she comes from the map that represents the seat of war. The speed of a vessel is also taken into consideration, and if the umpires think she has a chance to run away they let her go, and she seeks a harbor of refuge and is there laid up for such a time as is deemed necessary or sufficient for repairs.

The geographical location, the depth of water, the protection of land fortifications, the convenience of coal and such other circumstances as enter into modern warfare are all taken into consideration; for when a commander takes his ship into a harbor that is unprotected or has not a sufficient depth of water for his draught, the umpires take him off the board as they would a pawn that had been overtaken by a queen in a game of chess. In fact, the war games are very much like chess and are played in a similar manner, except that the men

are ships of different strength and the board is a map of the world.

These games were invented by the famous general, Von Moltke, of the German army, and have been used in the military schools of that empire for a long time. It is believed that the success of the German generals in the war with France was largely due to their training in this particular, for they had fought and refought over every inch of ground that lay between Berlin and Paris for years before the declaration of war.

Admiral Luce of our navy founded the American war college, and, having secured a set of the Von Moltke war games, adapted them for naval science and taught our officers how to play. When he was placed upon the retired list Capt. Mahan succeeded him, and he in turn was followed by a succession of the ablest and most scholarly men in the service.

In addition to the games of war, the students have the benefit of courses of lectures each term upon allied topics, such as geographical and political science, international law, history, tactics, gunnery and so on. The main features of the present administration are tactical and strategic games. Competent judges say that they have done more to bring the officers of the navy to a knowledge of the serious and important side of their profession than any thing that has happened since the Civil war, and the games, which were ridiculed when Admiral Luce first proposed them, are now becoming recognized as essential to the proper education of the commanders of ships.

The United States naval war college was founded practically in 1881, when Admiral Luce took formal possession, in the name of the United States, of Coaster's Harbor island, till then within the corporate limits of Newport and still connected with that beautiful pleasure city by a short wooden bridge. Before that time this island had been used as a refuge for the city's poor, but it was then ceded to the national government by the state of Rhode Island, that a training school might there be established for naval apprentices.

The training school still exists, but it has been developed into one of the most important places of naval instruction in the world. The youngsters learn how to handle a vessel by

practicing on the wooden hulk of the old Constellation, which is moored alongside the dock. Close by is the torpedo station, established later than the training school. There all sorts of practice and experiments are gone through with the torpedo boats Cushing and Stiletto, and there guncotton, smokeless powder and the fulminate of mercury for fuses are manufactured, and the steel used in new warships is tested.

The war college proper was founded in 1884, and Admiral Luce was its first president. Two years later he was succeeded by Captain Alfred T. Mahan. During his presidency the college made wonderful strides, and his book, Sea Power in History, termed by Gladstone the greatest work of modern times, was based upon his first course of lectures at the naval war college. After Captain Mahan was detached from the college to do duty in Europe, the institution was placed in charge of Commodore Francis M. Ramsay, and during his presidency it languished somewhat, not perhaps because of any personal remissness on the part of the commodore, but because of an opposition to the college among many influential naval officers.

But better times were coming for the Newport college. Assistant Secretary of the Navy James R. Soley became interested in it, and as a result the old Newport poorhouse which had hitherto been its domicile was abandoned and the present handsome college building was erected. This structure was formally opened in 1892 with great ceremony, but during the following summer the institution again languished, no orders were issued for summer lectures and the building was largely occupied for other purposes than that for which it was designed. Then Admiral Luce, the real founder of the college, came to its rescue, personally pleading with Secretary Herbert and Assistant Secretary McAdoo that the college should not be allowed to go down. Assisted by Captain H. C. Taylor, who afterwards was made president, the admiral prepared a scheme of study and maneuvers which were submitted to the secretary and his assistant. It was held by the admiral that some special instruction of the officers of Uncle Sam's navy was absolutely necessary if they were to be fitted for actual service in case of war. For 30 years, it was pointed out, the United

States had been at peace with all the world. During much of that time the navy had been much neglected. Within more recent years it had been greatly improved and its officers and men carefully drilled and instructed. But during all the 30 years, the admiral further pointed out, these officers had had no practice and but little tactical instruction, such as they could receive at the naval war college. There was much opposition to the scheme for the institution's revival, chiefly from the older and more conservative elements in the navy, but Admiral Luce was well backed by the younger and more progressive element, and success finally rewarded his efforts.

THE TRAINING OF SEAMEN.

BY WILLIAM WOODWORTH PHELPS.

[William Woodworth Phelps, lieutenant United States navy, was born in Maryland and was appointed to the naval academy from that state May 19, 1885; he has been stationed at the naval academy since Sept. 30, 1903; he is a well known writer on naval tactics and strategy, having contributed several articles on these topics to journals and periodicals.]

A distinguished British authority has said that the United States is potentially the strongest of the naval powers. The interior of our great country as a source of supply of men to man her fleets is but one of the resources that this eminent Englishman realizes is at the command of the nation's growing sea power.

The young men and boys enlisting at the navy's recruiting offices in the great cities of the middle west are intelligent, hardy and bright eyed young Americans. They are animated by pride in their country's naval traditions, are full of worthy ambition to earn promotion, and they show a patriotic interest in all that pertains to the duties of their new lives. With the national trait of quickly suiting themselves to new surroundings they are making a splendid body of American man-o'-war's men.

The whole country, not only the seaboard, is the navy's field for recruitment at all times. In time of war the seaboard offers, especially, the men of the valuable naval militia, of whom mention must prominently be made whenever the navy's resources are under consideration. During the short Spanish war naval militiamen to the number of about four thousand were enrolled for temporary service. Of them and their services and of their officers the secretary of the navy in his report at the close of the war said:

"These organizations were largely recruited outside of the seafaring class. They lacked the experience in gunnery, navigation and the habits of the sea which is essential to immediate service in the navy. On the other hand, they were men of a high standard of education and intelligence, and

rapidly acquired while on board ship the knowledge necessary for their efficiency. Considering their lack of experience, the services rendered were most valuable; the country has been amply repaid for the money expended in their instruction and training.

"The officers and men who were specially charged with the duty of coast defense displayed perfect aptitude for the work connected with patrol duty, owing to their intimate knowledge of home waters."

A national reserve of seafaring men is a pressing need of the country, and the navy department is exerting itself to bring about such an organization.

As the deck force constitutes by far the largest class of man-o'-war's men, it becomes necessary to yearly put about five thousand men and boys through their apprenticeship on board the training ships and fit them for the battleships and cruisers, to make up for the annual waste due to expiration of enlistments alone.

There are two classes of recruits trained for the seaman's trade—apprentices and landsmen. The apprentice system has been in operation a long time. There are two training stations, one at Newport, R. I., and the other in San Francisco bay, with the station ships Constellation and Pensacola respectively. The idea of giving the landsmen special preliminary training is of recent date, and was developed just after the Spanish war, when the inevitable strengthening of the navy loomed up as an immediate national necessity.

In the case of the apprentices, boys are bound over to the service of the government during minority, the parents or guardians signing written consents. They are accepted between the ages of fourteen and seventeen, enlisted on board the receiving ships and at the recruiting offices, and sent either to Newport or San Francisco. The former station has capacity for a thousand.

On arriving at the station each is given an outfit of uniform clothing, a clean white bag to keep it in, a hammock, a pair of blankets and a mattress, with a change of mattress covers. There he lives for six months, learning to take care of himself, being instructed in the rudiments of the seaman's

trade, moving from one event to another at the call of the bugle until his clockwork-like life becomes a second nature.

At the station he begins to realize that life is a serious reality; that man-o'-war discipline is but the discipline of life systematized. Before he leaves he sees why he is not always permitted to do every thing his impulse prompts.

From the first he obeys with willingness the commands of the boatswains and gunners, the instructors, themselves ex-apprentices, who have been through it all before him, men who have won their promotion to warrant officers from the ranks; and he looks at their officer's uniforms admiringly, and perhaps then and there makes up his mind that he, too, will win a promotion to warrant rank some day. In the meantime discipline is making his character, and the regular life of wholesome food and physical drills is making his muscles hard and his bones tough.

At the end of six months he welcomes the day he is drafted to the training ship—that unfamiliar looking vessel that came in the harbor and let go her anchor the evening before. Perhaps he goes to Europe if it is a summer cruise, or to the West Indies if it is a winter cruise; or from San Francisco his training ship may cruise to Japan, touching at Honolulu.

After this cruise of six months he gets his first promotion, his first raise of pay. Then comes the happiest day yet, and he goes home for a short furlough, strong, ruddy, clear skinned, with three ordinary years' growth pressed into one, the delight of his parents, and, in his suit of mustering blue, the envy of his less fortunate former boyhood friends.

His furlough expired, he reports on board a receiving ship, his bag and hammock, constant companions, with him, and has not long to wait until he is drafted to the general service and goes to his battleship or his cruiser, feeling quite an old sailor. From now on his promotion rests with himself, and it is not unusual for an apprentice, on the expiration of his enlistment, on his twenty first birthday, to be honorably discharged wearing the badge, holding the appointment and drawing the pay of a petty officer of the third class.

Upon his re-enlistment within four months from the date of his discharge he receives a bounty amounting to four months'

pay, and a dollar and thirty six cents added to his monthly pay thereafter. He now starts on his way to warrant rank in earnest, increasing his knowledge and strengthening his character, winning his promotion grade by grade to chief petty officer, so that on the expiration of this enlistment he finds himself an eligible candidate for examination for promotion to either gunner or boatswain.

Thus at the age of twenty five his life is assured. He has now ten years before him, during which time he is eligible to go up for examination for a commission in the line of the navy as ensign. Receiving this he thereafter ranks over all Annapolis graduates whose commissions bear dates subsequent to his own.

In sketching the career of this lad from his entry through his apprenticeship, ex-apprenticeship and his service in the warrant rank to his passing into the active line, it is superfluous to remark that every apprentice can not realize this possibility; for in the two thousand apprentices who may be passed through the training service every year, perhaps not more than forty at this time, though the number is bound to increase, eventually get warrants as boatswains or gunners; and the law, in operation but two years, limits the number of these officers who may be promoted into the line to twelve in any one year.

The landsmen under training outnumber the apprentices under training by perhaps two and a half to one. They are not minors under the enlistment laws, in the sense that they may enter if more than eighteen without their parents' consent.

The training ship day is a busy and hustling day. The men are turned up with their hammocks at five, and after half an hour for a cup of hot cocoa and a smoke it is, "Turn to!" and, "Scrub and wash clothes!" The captain of the hold serves out fresh water from the ship's tanks and the men get three quarters of an hour to bathe and scrub clothes.

The decks, boats and oars are then quickly scrubbed with sand. The water being squilgeed off the decks, the bugler sounds the bright work call and the brass railings and guns are polished in short order. At seven forty five comes the morning evolution. The first lieutenant takes charge, and at "Cross t'gallant and royal yards!" the men get their first exercise

aloft. That over, colors are made at eight o'clock, the band playing the Star Spangled Banner during the ceremony; and then the boatswain's mates pipe to breakfast.

One half hour for breakfast and smoke, and then again "Turn to!" The decks are cleared up for inspection, and at nine the youngsters get their second exercise aloft at the call "Loose sail!" At nine thirty sounds the assembly, and all hands, officers and men, turn out at quarters.

Divisions are mustered and inspected; formed in columns of fours, and, headed by the band, the whole crew marches several times around the deck, officers and men passing in review before the captain. The first drill call now sounds, and until twenty minutes past ten the watch officers drill their divisions. One has the main battery, another the secondary battery guns, another the manual of arms, as in infantry or perhaps at bayonet exercise or broadswords.

At the same time all the boats are lowered and go out for practice in rowing, under the instruction of the coxswains. From twenty minutes past ten till twenty five minutes to eleven there is a fifteen minutes stand easy, as our British friends call it. The men get a relaxation and a short smoke, and the boats are called in for relief crews. At twenty five minutes to eleven, "Out smoking lamps!" and drill till a quarter past eleven, boats out again with fresh crews.

During this period the warrant officers, the watch officers' assistants, conduct the drill. With the bugle's retreat at a quarter past eleven comes the recruit's third daily exercise aloft, and naturally every one is ready for "Furl sail!" At half past eleven—seven bells and the sun over the foreyard—the ship's cook brings the dinner to the mast, and the officer of the deck samples the savory, well cooked, abundant ration. He has been known to send for the wardroom steward on the spot and tell him to have the wardroom cook go find out from the ship's cook how to make good vegetable soup for the officers' mess. The ship's cook delights in the compliment, and thereafter the hopes of the cook are in the soup!

At noon dinner is piped, and until one all work is suspended, while the red meal pennant flies from the yardarm. Observation is timely here on the way our man-o'-war's man lives.

The component and daily parts of the navy ration are fixed by law. Until recently it had remained unchanged for forty years. It has now been varied, increased and brought up to date by act of congress.

A well ordered and ample commissary department is one of the essentials to a navy's efficiency. This is especially so with us, whose recruitment is entirely an enrollment of volunteers and not a maritime conscription.

To return to our training ship. At one o'clock the meal pennant comes down as the boatswain's mates call "Turn to!" and the afternoon work is on. Drill again from a quarter past one till half past two, with still different crews out in the boats. During this period the petty officers teach the squads under the warrant officer's supervision.

At half past two comes the retreat from drill. The boats are recalled and the baseball squad or the football squad, according to the season, goes ashore for practice. Perhaps teams from the divisions go to play for the division pennant. Formerly the men themselves stood the expense of their team outfits, but now the navy department supplies to ships adequate athletic outfits, including bats, balls, catchers' mits, catchers' masks, catchers' protectors, basemen's mits, double end striking bags, boxing gloves, footballs, football trousers with belts, football stockings, broadswords, broadsword masks, broadsword gloves and baseball suits of caps, trousers and stockings, and shirts with the ship's name across the breast.

Returning again to the events of the training ship day, a recreation period of two hours is on till half past four. During this time the day's mail is distributed and the mess tables on the gun deck are well occupied by lads writing to their homes in the interior, of their experiences in their new trade.

At half past four all hands are turned up at evening quarters and put through a short calisthenic drill, called the setting up exercise. Following this comes the fourth and last exercise aloft for the day and the light yards are sent down. What now remains of the day till taps belongs to the men ordinarily, with half an hour for supper, and excepting half an hour after dark for practice in night signaling. They amuse themselves variously.

Some go in for boxing, others for the broadswords. The musically inclined sit around the forecastle rail and sing music hall songs. Many are writing their letters or reading on the gun deck, for at this hour the libraries are opened. Some are devoted to checkers, others love backgammon—ducey-acey, as they call it. All enjoy the hour of the band's evening concert.

At half past eight hammocks are served out, and one by one the men begin to swing themselves in, their growing bodies and hardening muscles tingling with healthy fatigue. When at nine tattoo closes the day and the anchor watch is set, the last voice heard until to-morrow is "Turn in your hammocks and keep silence!" This quietus from the full throated chief master-at-arms is a scarcely needed admonition, for with the dying away of the buglers' taps the echoes to that restful hymn come back to the officer of the watch in a chorus of snores from the deepening chests of the best paid, best clothed and best fed man-o'-war's men in the world.

THE MARINE CORPS.

BY FRANCIS H. HARRINGTON.

[Francis H. Harrington, brigadier general retired, United States Marine corps, had been thirty eight years in the corps up to the time of his retirement Dec. 8, 1904. General Harrington has been one of the most active influences in the development of the high efficiency of the Marine corps and many of the reforms were at his suggestions.]

In 1775, before a single vessel of the navy was sent to sea, the marine corps was organized by an act of the continental congress by a resolution. From this date of its early organization to the present day this body of men has made a record for itself second to none. Commencing under Commodore Hopkins in 1776, it has had its representatives in every action in which the vessels of the navy have fought to the present day, participating in every naval engagement of the Revolution and the War of 1812; under Commodore Porter in the expeditions against pirates off Porto Rico, San Domingo, and Cuba; under Commodore Downes against the Malays off the coast of Sumatra. Again, under the immediate command of its own officers, a battalion of marines under Colonel Commandant Archibald Henderson, in 1836, left its quarters in the city of Washington and hastened to Charleston, S. C., on its way to the scene of savage warfare among the Creek Indians. Joined by a second battalion, the two were ordered to proceed immediately to Florida. The marines participated in the arduous campaigns under General Jessup and received from him the highest commendation. At the close of the Mexican war the statement was made by General Scott, that he had placed the marines where the hardest work was to be accomplished, and that he had never found his confidence misplaced. The history of the marine corps in the Mexican war is so replete with deeds of heroism and personal bravery that a volume could be written on this subject alone.

In Commodore Perry's expedition to Japan in 1852-55, the marines formed a large portion of the force under his command. In November, 1855, an insurrection occurring in

Montevideo, a company of marines, under First Lieutenant A. I. Nicholson, was landed and occupied the custom house and consulate. In the short space of five years, from 1855 to 1860, the officers and men of this corps had distinguished themselves in Montevideo; engagement with savages in Washington territory; the barrier forts in China; the riot in Washington; savages at Waya; expedition to Paraguay; services on Staten island; John Brown insurrection, and services at Kisembo, Panama. In the Civil war, from 1861 to 1865, the marine corps participated in every naval engagement, ashore or afloat, and frequently acted with the army.

It would be impossible still further to enumerate all the various duties devolving upon the corps from the Civil war to the present time. The fight at Formosa, Darien expedition, services in aiding the civil authorities, the Corean expedition, the Panama expedition in 1873, the labor riots, Universal exposition at Paris, at Alexandria, the expedition to Panama in 1885, disaster at Apia, Samoa, in 1889, are some of them. The brilliant part taken by this corps during the Spanish-American war will be easily recalled, especially the incident when a battalion of 647 officers and men was landed on June 10, 1898, at Guantanamo, on the southern coast of Cuba, and defeated a force of over 5,000 Spaniards, holding the place and finally affording a safe harbor for our fleets. With five months' campaigning in midsummer, with all the exposures incident thereto, so perfect was the discipline and so well was the welfare of the command looked out for, that there was not a single death from sickness to be reported.

Strictly speaking, there are only two powers that have marines in the real sense of the word, namely, the United States and Great Britain, and, curiously enough, they have identically the same regimental badge and motto. True, France, Germany, Italy and other maritime powers have so-called marine infantry and marine artillery among their armed strengths, but these continental marines have but little in common with their American and English comrades of the same name. They are intended and used for coast defense, for garrisoning seaports, and for hostile and offensive operations in the colonies. But they do not form a recognized part

of the complements of seagoing ships as they do in England and America, and, therefore, can not be described, strictly speaking, as jollies. In this country and Great Britian, however, the marines constitute the senior corps of the armed forces. In England the corps was first organized in 1664, and was recruited largely from the London trained bands, thanks to which it shares with the grenadier guards, the East Kent regiment and the royal London militia the otherwise exclusive privilege of marching through the city of London with colors flying and bayonets fixed. In the United States the marine corps was first organized in 1775 for the public defense, and in both cases the object which the authorities had in view in raising the regiments of marines was to provide the ships of the navy with a special force, which, while possessing the steadiness and the training of picked troops of the line, should be accustomed to the peculiar life on board men-of-war and available not only for duty on board ship, but likewise for use as a landing force whenever it became necessary to supplement naval operations by immediate action on terra firma.

In England the marines were first known as the admiral's regiment, and for the last 100 years or more the crown has been in the habit of vesting the chief command in that particular member of the reigning family who had adopted the sea as a profession. The present general of the marines is admiral, the prince of Wales, while his predecessor at the head of the corps was King Edward's sailor brother, the duke of Edinburgh and of Coburg. At one late moment the English marines constituted a force of no less than 30,000 men, and this strength was maintained throughout the American war of independence, in which they played a prominent part, and also subsequently in the Napoleonic wars. But at the present moment they number about 12,000 men, 9,000 of which are light infantry and the remainder artillery. The latter wear a blue uniform with scarlet facings, while the infantry have a scarlet uniform with blue facings, and the motto of both is the same as that of the United States marine corps, namely, "Per Mare, per Terram," the badge being likewise identical in the shape of a glove. They are commanded by three generals in addition to

the prince of Wales, three lieutenant generals and seven major generals.

The standard, physical and moral, of those who enlist in the marines is considerably superior to that of the line or of the seamen. This is partly due to the fact that the service is more popular, which enables the recruiting officers to effect a more careful choice in selecting their men. They receive better pay, and, in England at any rate, a better pension than soldiers of the army; and whereas in Great Britian the short service term has been adopted for the army, the long service term has been retained in the case of the marine corps, which enlists men for a term of twelve years, with special inducements in the way of increased pay and pensions when they re-engage for nine years more. This explains why the marines in England are always looked upon as such seasoned troops, and why they are so immeasurably superior in military training, and in all soldier-like qualities to the ordinary regiments of the line. Here in the United States the enlistment is for five years, and so popular is the corps that a large proportion of the men re-engage on the conclusion of their term.

The United States marines, by the by, are able to boast of being the first armed force of this country to plant its flag upon a fortress in the old world; and it is in recognition of the capture of the stronghold of Berne, in Tripoli, by the marines, that their colors to this day bear the name of Tripoli inscribed thereon. The American jollies may be said to have done their share of fighting both on land and at sea in all the hostile operations in which the United States has been engaged since the proclamation of its independence. They displayed magnificent gallantry in the historic engagement between the Chesapeake and the Shannon, figured in the Mexican war as well as in all the important coast and sea fights of the Civil war, served in Cuba in the war of 1898, took part in the battle of Manila as well as in all the subsequent operations in the Philippines, and led the march for the relief of Pekin in 1900. It is a splendid record, and has won for them on no less than two dozen occasions the thanks of congress.

While the commanding officers on board ship appreciate the marines at their full worth, Admiral Farragut expressing

the opinion that the marine guard is one of the great essentials of a man-of-war, it may be questioned whether they are, as a general rule, popular with the rank and file of the navy. This is no doubt in part due to the fact that in olden times, when the navy was recruited by means of the press gang and mutinies were consequently frequent, the marines were used by the naval commanders for the suppression of all insubordination and sedition on board. In the great mutinies of the Nore, at Spithead and Bantry bay, in the early part of the last century, it was largely owing to the loyalty and to the gallantry of the marines on board the three fleets that the mutineers were reduced to subjection and the ships saved from destruction, and before the close of the year parliament had publicly thanked the marines for their devotion and their steadfastness in connection with the affair. It is due in a measure to this that the jollies have ever since been looked upon by the jack tars as constituting a species of police over them and the presence of the marines on board as a sort of imputation upon their loyalty. This impression has been kept alive to a certain extent by the fact that the marines are frequently employed, even to this day, in duties of what might be described as a police character. And of course it does not help matters that while they are compelled to assist to man boats for shore operations and to form the crews for the heavy guns, they are exempt from most of the hard work that falls to the share of the sailor. In fact, beyond guard mounting and drilling they have but little else to do, and are under the immediate orders of one of their own officers.

The size of the detachment of marines on board a man-of-war varies according to the size and rating of the latter, and while in the case of some vessels it is as large as 100 men, with three officers, in smaller ships it will not exceed twenty or thirty men under the command of a subaltern. The latter is in turn subject to the orders of the captain of the ship, ranks as a wardroom officer and, like his men, is subject to the naval discipline act when afloat, but becomes subject to the military rules and regulations when on land. In fact, his amphibious character is most strikingly displayed by the circumstance

that his name appears both in the army list and in that of the navy.

I may add, that while there is marine infantry and artillery, there is no marine cavalry. Indeed, the marine, in spite of his being primarily a soldier, has the reputation of being as little at home on horseback as the sailor, and the term horse marine is employed more to indicate ignorance of matters equine than proficiency in that particular branch of sport.

On shore duty the marines conform to army regulations and are expected to combine to a considerable extent the functions of the infantryman, engineer, signalman and light artilleryman. In order to permit this versatility of operations the working equipment of a detachment of marines detailed for shore service embraces Krag rifles, Colt automatic, Gatling, or some other type of rapid fire guns, picks and shovels for throwing up entrenchments, and apparatus for signaling by night or day. On shipboard the marines have nothing to do with navigating the vessel, but man the secondary batteries, act as sharp shooters in the military masts, and in the event of a conflict at close quarters are depended upon to repel the attacks of boarders. The United States marines range from eighteen to thirty five years of age and have an average height of five feet six inches. The men enlist for a period of five years and receive from $13 to $22 per month, in addition, of course, to food, clothing, medicines and, in short, every necessity. The privates of the marine corps are not sent to sea until after they have been thoroughly drilled in their various duties at one or another of the training schools maintained at Washington, Annapolis, Brooklyn, Norfolk, Boston, Portsmouth, and League Island. The work of these institutions includes the drills of the soldier, company and battalion, skirmishing, target practice, and bayonet exercise, as well as all military duties and ceremonies. The marines wear khaki when occasion warrants, but are possessed of a full dress uniform, which is possibly the most conspicuous worn in any branch of the United States military service. The caps and coats are of dark blue; the trousers and overcoats of light blue, trimmings being of scarlet. The marine, when on board ship, is assigned the regular blue jacket ration, which is accounted

as equivalent to thirty cents, but, when on shore, receives the army ration, which is rated at seventeen cents per man per day. When landed from war vessels it is, of course, essential that the marines travel in light marching order, and accordingly they do not make use of the regulation army tents, but use instead the Sibley tents. One of these tepee-like shelters will accommodate sixteen men, sleeping with their heads together at the center pole and their bodies reaching out in all directions like the spokes of a wheel.

While the marine is supposed to know something of the sea he is not presumed to be a good seaman, and is never called upon to help coal the ship or perform other tasks which rank as the especial duties of the enlisted men of the navy. For the most part the work of marines afloat is made up of such light tasks as guard or sentry duty and service as mail orderlies or official messengers between ship and shore. The marines are entitled to much of the credit for the superior marksmanship which has been the most striking feature of this country's naval progress since the Spanish war. Formerly the responsible position of gun pointer was open only to seamen, but now there is an opportunity for any enlisted man on a warship to win the extra pay and prizes which attach to this coveted post, a gun pointership being a rating rather than a position. Not only are numerous marines serving as gun pointers, but there are on the prominent American naval vessels not a few guns which are manned entirely by these soldiers of the sea.

One of the most important but little emphasized functions of the United States marine corps is found in its influence against mutiny on the vessels of the American navy. The necessity for such a safeguard will be better appreciated when it is taken into consideration that in seeking men for the rapidly growing navy the enlistments sometimes show twenty foreigners to one American; and it is hoping for too much to expect a set of foreign sailors to be true to the flag under all circumstances. The marines, on the other hand, are almost without exception American born, and the detachment on a ship constitutes a body separate and distinct in interests and sympathies from the crew proper.

Officers of the marine corps are on the same footing as to rank and privileges as similar grades in the army. Of late a movement has been inaugurated to give them a higher degree of technical knowledge, and applicants for an officer's position in the corps must spend a year or more in the Annapolis school for the instruction of commissioned officers of marines. The increasing governmental appreciation of the value of the marine corps as a branch of the military establishment is found in the fact that whereas, a few years ago, the ranking officer of marine could have no higher rank than colonel, Gen. Elliott, the new commandant, has the rank of brigadier general and has fully 8,000 men under his direction. Of this full strength several hundred are boys, ranging from fourteen to twenty one years of age, who have been enrolled as buglers and drummers, and two of whom are attached to every United States war vessel carrying marines.

WEAPONS OF DESTRUCTION.

BY CHARLES C. FITZMORRIS.

[Charles C. Fitzmorris, journalist; was born May 1, 1884, at Fort Wayne, Ind.; educated at the public schools; became a member of the staff of the Chicago American in 1902; has been staff correspondent for that paper and is author of many articles for newspapers and magazines.]

Maxim, the inventor of the Maxim rapid fire gun, Maximite, a terrible explosive, and other vehicles of destruction, replied to a criticism that his genius might be better employed than in devising new weapons for war, by saying that inventors of terrible weapons were the most effective peacemakers. In explanation he added that when warfare means annihilation to both combatants, universal peace will follow, never to be interrupted by strife. The Russian-Japanese war, with its awful carnage on both sides, and a knowledge of the more terrible and modern engines of war would seem to indicate that the time is ripe for the appearance of the dove of peace, bringing the olive branch to all the nations of the globe.

The genius of those whose efforts are directed to the development of the machinery of war has left no known place to which warfare may not be extended in its most terrible form. The land is guarded by cannon that have range of almost twenty four miles. Battleships, torpedo boats and other forms of marine craft carry war to all the oceans, while the depths of the sea are patrolled by submarine boats and serve to conceal mines that destroy whatever they touch.

The essential of all the arms of war, with hardly an exception, is ammunition. Gunpowder in its early form has been supplanted by newer explosives of far greater power. Of the developments in this line probably the most important has been the invention of smokeless powder. The quality that is implied by its name is not its chief qualification. In the old forms of powder about forty per cent of the charge remained as solid matter, interfering with the next charge, preventing rapid firing and of course making impossible the development of all the energy of the powder. Added to all these faults the old form of powder produced a great cloud of

smoke, that had the double effect of interfering with the operation of the weapon and plainly indicating its position to the enemy. Smokeless powder has done away with the smoke, and the explosion transforms almost all of the charge into gas to drive the projectile, making possible the use of larger projectiles—that is to say longer ones—in guns, without increasing the bore.

New explosives, each more deadly and more powerful than its predecessor, are being manufactured by inventors all over the world. There are already many that are far more powerful than the guncotton and nitroglycerine that were brought forth a few more than ten years ago. Chief among the new explosives is nitrocellulose — a mixture of nitroglycerine and other explosives—which is used in the larger cannon to-day on land and sea. We have also cordite, made from nitroglycerine, guncotton and petrolatum; melinite, made of picric acid and guncotton; lyddite, almost the same as melinite; bellite, made of ammonium nitrate and nitrobenzine; indurite, of guncotton and indurated nitrobenzine; maximite, dunnite, and a half score of others the composition of which is kept secret by the manufacturers.

Smokeless powder, which has reached a high stage of development, is used in the manufacture of ammunition for every class of small arms, and, with other inventions, has made them factors to be reckoned with as well as the larger weapons.

The most deadly weapon of the pistol form in the world is the American magazine pistol, weighing twenty three ounces and measuring seven inches in length. Cartridges, filled with smokeless powder, are stored in the handle of the pistol and are fed automatically, the recoil throwing the used shell out and a new cartridge into place, as long as the trigger is worked and there are cartridges in the magazine. Another of the modern forms of small arms is the rifle with a magazine attachment, similar to the magazine of the pistol, but larger and containing more cartridges. The form of rifle until recently used in the United States army was the Krag-Jorgenson magazine rifle. The Mauser and Lee-Metford and the new Springfield rifle are other well known forms. In all these rifles the recoil of the cartridge fired first sets a mechanism

into operation that automatically throws back the trigger, ejects the old shell and pushes a fresh cartridge into place as often as the weapon is fired or until the supply in the magazine is exhausted. The bullet used in these rifles is long and narrow, steel tipped and of great penetrative power. The new Springfield rifle has a range of five miles, the bullet having a velocity of 2,300 feet per second leaving the weapon or sufficient to drive it through four and a half feet of white pine.

An instrument that has added to the effectiveness of the rifle is the hyposcope, a device containing mirrors and fastened to the stock of the rifle behind the back sights, which enables the marksman to aim accurately with his head a foot or more beneath a rampart or other protection. This invention was used extensively and with uniform success during the Boer war.

The rapid fire gun, which is a form of rifle on a larger scale, and the Gatling, Maxim rapid fire, and other forms of weapons, all similar to these in their construction and operation, are regarded as among the most useful of the modern war weapons.

The rapid fire gun, of the Maxim and similar makes, fires bullets in a perfect hail and is discharged by turning a crank that feeds the bullets into the breech in a string, the recoil of an explosion of one bullet throwing the next into place and discharging it. Machine guns that fire bullets from a series of barrels, as the Gatling gun, have been highly developed. The modern Gatling has ten barrels which are loaded and discharged at the rate of several hundred shots a minute. Improved guns working on the same principles have discharged more than a thousand bullets a minute, but the best is constructed to fire from 250 to 500 shots every sixty seconds.

Improvements in methods of steel making have enabled inventors and gun manufacturers to develop the cannon to a point where a range of twenty four miles has been attained in practice, although this is of course impractical in warfare. The new methods of steel making have resulted in gains of fifty per cent or even more in strength, for the same weight and forgings are made with as great as 70,000 pounds elastic strength and about 130,000 pounds ultimate or breaking strength.

The early cannon—such as the ones used during the Civil

war—besides being much smaller than the cannon that are possible of construction nowadays, was capable of discharging only a comparatively small shell with a small charge of powder. It was thought to be doing exceedingly well when a projectile attained a velocity of 1,500 feet per second leaving the muzzle. The first improvement in this gun came when an inventor wrapped a hoop of iron around the barrel and breech; and this innovation proved so successful that the practice of making guns by shrinking one hoop above the other—resulting in the built-up gun—displaced almost entirely for a time the old method of casting guns. This gun, proving the standard for many years, attained as high as 3,000 feet per second as the initial velocity of the shell. Mr. Longridge, of England, suggested a wire wound gun that proved even more successful than the weapon wrapped with steel hoops, owing to the fact that steel attains its greatest tensile strength when drawn out into small sizes. Other guns similar to these described are known as the Brown segmental gun, which is composed of a small segmental core outside of a thin steel tube, the whole wrapped with wire and covered by an outer jacket.

All modern cannon are fitted with the latest appliances that make for rapid firing. Electrical devices discharge the weapon, open the breech, and perform other work of the gun much more rapidly than would otherwise be possible. Telescopic sights, permitting great accuracy of aim and a mechanism to make up the recoil of the gun are other improvements. In the 12- and 13-inch guns the recoil is taken up by hydraulic cylinders, the platform upon which the man who operates the weapon stands, moving backwards with the gun. The 12-inch guns of the new battleships recoil from thirty three to thirty five inches and have metal springs to return them to their former position after firing.

Many enormous guns have been built, some of them capable of throwing projectiles for many miles, but the enormous charge required to operate the large weapons strains them, and, in a very short time, renders them practically useless after a few hundred rounds have been fired. Naval men as a rule now prefer the 12-inch and smaller guns to the larger cannon.

The cost of manufacturing the large 16-inch gun in place at

Sandy Hook was $155,400, of which $54,000 was the cost of transporting it from Watervliet, N. Y., to its position at Sandy Hook. Each time it is fired the cost is $865.00. The disappearing gun, for use in forts the location of which it is desirable to conceal is an American product. The weapon is mounted upon a pair of steel braces that take up the recoil and, after the gun is fired, carry it backwards beneath the level of the rampart, concealing it from view.

A comparison of the various sizes of guns, their practical rate of fire per minute, etc., follows:—

Gun	Muzzle Energy of Gun	Practical Rate of Fire Per Minute	Muzzle Energy in Five Minute
Four.....12-Inch	46,246 foot-tons	..... 0.66	610,447 foot-tons
Eight..... 8-Inch	13,602 " "	..... 1.2	652,896 " "
Twelve..... 6-Inch	5,838 " "	..... 3.5	1,225,980 " "
Twelve..... 3-Inch	709 " "	..... 6.5	276,510 " "

This table, compiled by the United States bureau of ordnance, indicates that the 6-inch guns make much the best showing and are as a result gaining in popularity rapidly.

The penetrative power of projectiles has made necessary new forms of armor plate. The best of to-day will withstand more than twice the thickness of the armor of a few years ago. We first used steel plates formed by hammering under a steam hammer; now they are hydraulically pressed while hot, and rolled under rollers with enormous pressure. They are hardened after cooling by a process that adds about twenty five per cent to their strength. Armor plate, however, no matter how perfect, is incapable of withstanding the tremendous shock of the modern projectile, and the best that is claimed for it is that it prevents the passage of the projectile or retards the first few of them.

Balloons, capable of being steered, and the air ship that is rapidly becoming a perfected machine, have carried war into the air, and, filled with explosive bombs that are equipped with time fuses, form an important adjunct to modern armies.

The modern battleship, equipped with great guns with ranges of as high as twelve, fifteen and even more miles, and fitted with sights that make it possible to train the gun upon

a target invisible to the ordinary eye, can be compared to the modern land fortification. They are proof against almost anything but a mine or a torpedo. Of these the latter is perhaps the most dangerous. The torpedo consists of a cigar shaped tube, equipped with steering gear, propeller, and compressed air or electric motors. The Whitehead torpedo is from fourteen to eighteen feet long and from fourteen to eighteen inches in diameter at its widest part. The largest weighs over a thousand pounds and carries a charge of a hundred and thirty three pounds of wet guncotton—sufficient to blow up the largest warship afloat. It is launched from a torpedo tube, and propels itself for more than a mile or until it strikes its target. A pointed rod in the bow sets off the charge upon contact.

The submarine boat, which has reached a high stage of development, is used to set off the torpedo chiefly, and these little vessels, sailing along with only a foot or so showing above the water or entirely submerged beneath it, prove one of the greatest menaces to the great warship. The Holland, which was the first successful submarine boat, has been adopted, with several other makes by the United States—which now possesses more than a dozen of them. The speed of the boats, when submerged, is between seven and ten knots. The boats are about sixty five to seventy feet long, with an average displacement of about 120 tons when entirely submerged. On the surface, gasoline engines of 160-horse power furnish the motive power and store the air and electric current used when the vessel is submerged. There are three to five water tight compartments and air flasks in which fresh air is stored at 2,000 pounds pressure.

Other weapons of warfare that are used beneath the seas are mines, attached to the bottom or anchored, which explode and set off hundreds of pounds of guncotton when a vessel comes in contact with them. Other forms, used in harbors chiefly, are exploded by the pressure of a button from the shore.

HISTORIC SWORDS.

BY RANDOLPH ILTYD GEARE.

[Randolph I. Geare, curator in the Smithsonian Institution and National museum at Washington, is an authority on American history and especially on medals and relics as illustrating the nation's development. He is the author of numerous historical articles in periodicals and reviews and has read a number of papers on such topics before learned societies.]

There is nothing that appeals with greater force to the American, or that is more likely to fire his enthusiasm and love of country, than patriotic acts of sterling heroism. Deeds of valor have for ages formed the favorite themes of bards in every land, and the nation is unknown which fails in some degree, at least, to appreciate the honor and bravery of its warriors. The United States government, from its incipiency, grasped the importance of this fact, and has bestowed thousands of medals upon its military and naval heroes. Swords, too, have been presented by congress, or purchased from the families of the heroes and given to the nation as a lasting tribute to their fame.

There is probably hardly any one in the country who has not read again and again the account of the victory which Admiral Dewey won over the Spanish fleet in Manila bay on May 1, 1898. For this, congress voted a costly sword, which was presented to him in October, 1899, by the president.

The sword, with the exception of the steel blade and the body metal of the scabbard, is made entirely of 22-karat gold. On the pommel is carved the name of the battleship Olympia, and the zodiacal sign for December, the month of Admiral Dewey's birth. Circling these, there is a closely woven wreath of oak leaves, the standard decoration for rank. Farther down, the metal work takes the form of a gold collar, on the front of which are the arms of the United States with the blue field of the shield in enamel, and below them are the arms of Vermont, the admiral's native state, with the motto, Freedom and Unity, and the colors of the shield in enamel. Stars serve to decorate the plain part of the collar, and a graceful finish is given to this part of the hilt by a narrow band of oak leaves.

The grip is covered with fine sharkskin bound with gold wire and inlaid with gold stars.

The guard is composed of a conventional eagle, terminating in a claw, clasping the top, indicating control and confidence; the outspread wings form the guard proper. The expression of the eagle is that of cool determination. The bird, while firm, still bears a message of peace in the laurel wreath held in its beak. The wreath serves as a protection, covering the point of the beak, and preserving the proper outlines of the guard. The scabbard is of thin steel, damascened in gold with sprays of ros marinus, a delicate sea plant, signifying fidelity, constance, and remembrance. Sprays of oak leaves and acorn secure the rings and trappings of the scabbard; above these, on the front of the scabbard, is a raised monogram in brilliants (diamonds) entwining the letters G. D., and immediately under them are the letters U. S. N., surrounded by sprays of ros marinus. The ferrule, or lower end of scabbard, terminates in entwined gold dolphins.

The sword blade is damascened with the inscription:

> The gift of the Nation to Rear Admiral George Dewey, U. S. N., in Memory of the Victory at Manila Bay, May 1st, 1898.

The letters are of an ornamental character, and sufficiently large to be dignified. The Phenician galley, representing the first craft of the navies of the world, supplies the rest of the ornament on this side of the blade. On the other side of the blade is shown the flight of the eagles of victory, bearing festoons of laurel to the four quarters of the earth.

The mounting of the belt and the trappings are the regulation buckles, pierced slide rings and swivels, all of 22-karat gold, and ornamented with the oak leaves and acorns. The bullion tassel and embroidered belting is specially made, and much superior to that usually employed.

The city of Boston also presented Admiral Dewey with a sword, and both of these swords, together with the other presents showered upon him by a grateful nation, have been on exhibition in the national museum.

Two swords of General James Shields are exhibited. They were purchased from his widow and children in honor of his gallant services in the Mexican and Civil wars, and sever-

al thousands of dollars were paid for them. One was presented to him by the state of South Carolina, and the other by the state of Illinois. General Shields was an Irishman by birth. He came to this country in early life, and at the commencement of the Mexican war was appointed a brigadier general in the United States army.

A handsome sword and medal were presented by congress to Commodore Jesse Duncan Elliott for capturing two British vessels (Detroit and Caledonia) at Fort Erie, while serving under Perry. The exploit was remarkable for the lightning speed with which it was arranged and carried out. It is said that after the expedition left Buffalo Creek, hardly ten minutes elapsed before the vessels and their men were made captives. Crowds of people watched the brilliant capture from the shores. There is also exhibited the scimitar, with hilt beautifully ornamented with gold, which was presented to Commodore Elliott during his command of the United States squadron in the Mediterranean (1835-36).

The victories of Commodore James Biddle are still fresh in the minds of students of American history. At the age of twenty nine he was appointed first lieutenant of the Wasp, and when six days out at sea fell in with six British merchantmen convoyed by the Frolic. A terrific fight, ending with a hand to hand encounter, ensued, and the Wasp was victorious. His sword, presented to him by the viceroy of Peru, has a curved blade, a gold hilt set with five diamonds, and a jeweled scabbard. It now adorns the historical exhibit in the national museum. Commodore Biddle was conspicuous in the Tripoli war (1801-1805), the war of 1812, and the war with Mexico. He was also instrumental in negotiating a treaty with the Ottoman empire in 1830-32, and in 1845 was appointed one of the commissioners to ratify a treaty with China.

By no means the least interesting object in the national collection is a Moorish flint-lock gun, ornamented with silver and coral, which was presented by the emperor of Morocco to President Thomas Jefferson. A naval cutlass, captured from the English ship Serapis by John Paul Jones, commanding the Bon Homme Richard, is a reminder of the pluck of that indomitable fighter. In 1779 he sailed for the British

coast for the purpose of intercepting the British Baltic fleet. After a number of thrilling adventures, which are well recorded in Wilson's American Military and Naval Heroes (Vol. I.), he engaged in fight with two British vessels, the Serapis and the Countess of Scarborough. The Bon Homme Richard was inferior both in size and in armament. In the beginning of the fight the American vessel was worsted, and, when in an almost sinking condition, Jones was asked to surrender. He replied that he hadn't commenced fighting yet, and that he would not strike his colors till he had been fairly beaten. Not long afterwards the British ships were forced to give up the fight. A sword given to John Paul Jones by the king of France is also exhibited, together with the scimitar, as well as a sword, musket, and piece of the flag from the Serapis, and the entire flag from the Bon Homme Richard. Later John Paul Jones entered the Russian navy and served under the prince of Nassau in a war against the Turks. The Turkish fleet being destroyed, Jones retired from the service and went to Paris, where he died in 1792, and was buried with every honorable distinction at the expense of the French national convention. After 113 years his remains were discovered and brought back to the United States by a fleet of warships. They now rest at Annapolis.

Brigadier General Gabriel Réné Paul, who served with much distinction in the Seminole war, the war with Mexico, and the Civil war, has bequeathed two of his swords to the nation. One was presented to him by the twenty ninth regiment of New Jersey volunteers, the other by the citizens of Missouri for gallantry. It was he who led the forlorn hope at the storming of Chapultepec, for which he was highly commended by congress.

There is an antique Spanish sword, a relic of the war with Mexico, which was presented to Captain J. T. Ord, U. S. A., when in Mexico. Prominent among the naval heroes of that war was Commodore Matthew Calbraith Perry, brother of Commodore Oliver Hazard Perry. The story of his capturing several pirate ships in the West Indies is full of exciting interest. Later he was engaged in the siege of Vera Cruz, and in 1852 commanded an expedition to the China seas and Japan,

which resulted in the negotiation of a treaty that opened the Japanese ports to American commerce. While with the Concord at Alexandria in 1832, Ali Pasha, bey of Egypt, presented him and several of his officers with thirteen scimitars, all of which adorn this exhibit.

Enhanced by the luster of his grandson's bravery at the battle of La Guasimas, Cuba, and of his son's warlike deeds through the Mexican war, Indian wars, and the late war with Spain, the name of Captain Erastus Allyn Capron will always be gratefully remembered by the nation. A cadet in 1829, he was active in the war against the Seminole Indians when he distinguished himself for bravery and gallant conduct in the battle of the Withlacouchee. A year later he was made first lieutenant. Two years following, during the disturbance on the Canada border, he served on the northern frontier. He was afterwards stationed at Houlton, Maine, pending the disputed territory controversy, and became a captain in 1847. During that year he served in the Mexican war, and was engaged in the siege of Vera Cruz and in the battle of Cerro Gordo. He also fought in the battles of La Hoya, Oka Laka, and Contreras. In the battle of Churubusco, August 20, 1847, when gallantly leading his company in the storming of the strongly intrenched convent which served as a citadel, he was killed. His sword, with white leather baldric and plate, was deposited in the national museum by his daughter. His son, Allyn, followed in his father's heroic footsteps. After filling many positions efficiently, he served conspicuously in the Mexican and Sioux campaigns, and was recommended for a brevet for gallantry in action at the battles of Wounded Knee and Drexel Mission. Later he went with General Shafter to Cuba. It is said that Capron's guns opened the fight at Santiago, and some days later when General Toral surrendered, the Capron battery was assigned the duty of firing the salute in honor of the victory. Captain Capron died at Fort Myer, Virginia, from the effects of a fever contracted in Cuba, and without knowing that he had been recommended for a brevet for conspicuous services during the Spanish-American war. Many interesting relics of this brave man are in the collection, including his regulation artillery sword, belt, and breastplate.

His son Captain Allyn K. Capron (grandson of Captain Erastus Allyn Capron) was one of the earliest heroes and victims of the Spanish war. His last cry, "Don't mind me, boys, but go on and fight," is fresh in every mind. He enlisted when nineteen in troop B, fourth United States cavalry, in order to obtain a commission, having failed to secure an appointment at West Point. After three years in the service he was commissioned second lieutenant in the fifth United States infantry. Shortly afterwards he was assigned to duty at St. Augustine, Florida, and a few months later was ordered to Mt. Vernon Barracks, Alabama, to take charge of the Apache Indian prisoners of war. In 1894 he was transferred to the seventh United States cavalry, still remaining with the Indians, who had now been transferred under his charge to Fort Sill, Indian Territory. On the breaking out of the Spanish-American war, he was appointed a captain in Roosevelt's rough riders, and was killed on his twenty seventh birthday while leading the advance at La Guasimas, Cuba. The relics of this brave officer now in the National museum number fourteen objects, including his regulation infantry sword and his cavalry saber, which he carried at the time of his death.

Another interesting relic of the Spanish war is the sword carried by Lieut. J. Garesché Ord in the battle of San Juan hill. This hero was killed while performing the humane act of saving the life of a Spanish officer, who, mistaking his intention, fired at him, wounding him mortally.

A short scimitar with etched blade, carved ivory grip, and chain guard, was secured by Lieut. Commander Stephen Decatur during the siege of Tripoli on August 3, 1804, in a hand to hand contest. His opponent had drawn a dagger when the latter seized his arm and shot him with a pistol. The war with Tripoli was brought about by the refusal of the United States to pay the annual tribute demanded by Tripoli for the protection of American commerce from pirates.

Among the honored men of the Revolutionary war was Brigadier General E. W. Ripley, nephew of President Wheelock of Dartmouth college. He rendered excellent service at Niagara, for which he was brevetted major general, and was also awarded a gold medal by congress. A handsome sword

with etched blade, brass grip and guard, having a scabbard handsomely engraved with battle scenes, was presented to him by Daniel D. Tompkins, governor of New York, as a testimonial to his talents, patriotism, and conduct.

Next comes the sword carried by Lieut. David Jameson. He fought in some of the most trying battles and exhibited true American grit. The state of New York presented a sword, belt, and buckles to General Jacob Brown, U. S. A., for signal services at the battles of Chippewa, Erie, and Niagara in 1814, and the United States government gave him a gold medal. He was afterwards made senior major general commanding the United States army. His remains lie in the congessional cemetery at Washington, and over them has been erected a truncated marble column upon an inscribed pedestal.

Among the swords most recently added to this collection are: one presented to Brigadier General John Wynn Davidson by the officers and enlisted men of the first Iowa cavalry, United States volunteers, for his gallant co-operation with General Steele in the capture of Little Rock, and the gold sword presented by the state of Ohio to General George W. Morgan in recognition of his services during the Mexican war. With the sword are also a pair of silver mounted pistols, presented by the citizens of Mount Vernon after his return from the Mexican war; two military belts and shoulder straps; a sword and spurs used during the Mexican war; and a sword which he carried in the Civil war.

Before passing to the other heroes of the Civil war it seems proper to mention the sword of Ransom Clark, who was the only one to escape death in the massacre of Major Dade's command of 117 men near Wahoo swamp during the second war with the Seminole Indians (1835–1842). At the time of the massacre Major Dade was on his way to relieve General Clinch at Fort Drane, when he was surprised by a party of Indians lying in ambush.

Of General Grant's swords there are four in the collection. The first, known as the sword of Chattanooga, was presented to him by citizens of Jo Daviess county, Illinois. It has a straight blade, is double edged, and is etched with monogram and

military trophies. The pommel is of gold, with grip guard and guard plate ornamented with tortoise shell, and inscribed, "the hero of the Mississippi." The scabbard, which is of gold, is engraved with the names and dates of the battles of the Mexican war in which General Grant was engaged, and also of the battles at Belmont, Black river bridge, Vicksburg, and Chattanooga, all of which occurred between 1861 and 1863,

The celebrated New York sword was presented to General Grant by some of his friends through the metropolitan fair in aid of the United States sanitary commission, New York, April 23, 1864. Its blade is straight, with beveled edges, and is etched with military trophies and other designs. The pommel is of gilded silver inlaid with rubies, diamonds, and sapphires. The grip is of oxydized silver, decorated with bas reliefs. The scabbard is of sterling silver, polished and gilded, and is engraved with General Grant's name, the date of presentation, etc.

When the confederates at Fort Donelson fell upon the right wing of Grant's army, one of his officers, observing that their haversacks were filled with rations, reported the fact to Grant, saying, "They have come out prepared to fight for several days." Grant, however, understood the situation in a moment, replying, "This means retreat, boys. Soldiers don't fill their haversacks like this unless they are planning to run away. Now then, one more sharp attack and we'll finish the fight." After it became apparent that success must crown Grant's arms, General Buckner inquired on what terms Grant would accept his surrender. "Unconditional surrender," said Grant, "are my only terms." Soon afterwards Grant's army marched in and took possession of the fort. In honor of this triumph a splendid sword was presented to him by Messrs. G. W. Graham, C. C. March, C. W. Lagout, and John Cook. It is popularly known as the sword of Donelson, and is the one which Grant generally carried afterwards. Its straight blade is etched with military trophies. The pommel is decorated with bas reliefs. The grip is of carved ivory, and the gold plated scabbard is engraved with Grant's name and the names of the donors. The fourth of General Grant's swords, a Spanish sword, was presented to him in 1873 by the Spanish repub-

lic. It is 39½ inches long, has a fine Toledo blade, with guard of steel, ivory grip, and steel scabbard, ornamented in gold and enamel. On the blade are inscribed the following words: "Belmont, Donelson, Shiloh, Vicksburg, Mission Ridge, Spottsylvania, Richmond. Let us have peace. U. S. G., Fabrica de Toledo, 1873," while on the hilt is the inscription "E pluribus unum."

It is appropriate here to speak of the relics of General William Tecumseh Sherman, whom Grant placed in full control of the army of the west. Sherman's memorable march to Atlanta is known the world over, but it was not till after several days of hard fighting that he was able to telegraph to Lincoln, "Atlanta is ours, and fairly won." Later, on entering Savannah, he again telegraphed: "I beg to present to you as a Christmas present the city of Savannah with 150 guns, plenty of powder, and 25,000 bales of cotton." His dress sword, sash, belt, uniform, and other objects have been placed with this historic exhibit, and more of his swords, etc., are to be added shortly.

The nation is also the fortunate possessor of four swords commemorating the victorious career of General Winfield Scott Hancock, who was especially conspicuous as a military leader at the battles of Fredericksburg, Chancellorsville, and Gettysburg, and as the leader of the second army corps in the campaign of the army of the Potomac. They are: The regulation sword which he carried through the Civil war; the sword of Captain Edward Johnson, given to him by the citizens of Virginia for service in Mexico, and presented by Captain Johnson to General Hancock; the sword presented to General Hancock at Yorktown, Virginia, in 1881; and his regulation sword which he carried as major general.

Another handsome relic of the Civil war is the dress sword carried by General James Birdseye McPherson. At Fort Donelson, Shiloh, Corinth, and Iuka he served as chief engineer on Grant's staff. Later he organized and commanded the seventeenth army corps, which neld a very prominent place at the siege of Vicksburg. In 1863 he was commissioned a brigadier general in the regular army, and in the following year he commanded 30,000 men in line of battle.

He was killed at the age of thirty five on Leggett's Hill in front of Atlanta. General Grant said of him that he was "correct in judgment, calm in danger, knew his ground, was untiring in energy and quick in perception." General McPherson was a descendant of Lionel McPherson, a knight in the Crusades, and on his body was found a sword which Lionel carried in the rescue of Jerusalem.

A saber and belt drawn from the army stores at Richmond, Virginia, and carried by Lieut. P. McDevitt while serving in Lieutenant Winfree's battalion, was presented to the national museum by himself in 1886.

Among other swords in this collection is the sword of honor and sash presented to Col. Augustus G. Tassin by the members of his command and the citizens of Nevada in 1870 for meritorious services; a sword and belt presented to Capt. A. H. Foster of company D, twenty fifth regiment of the Massachusetts volunteers, by his men as a token of their esteem for his bravery at the battle of Roanoke, February 8, 1862; a beautiful sword with a Toledo blade presented to Dr. George C. Clitherall by Hon. J. R. Poinsett, secretary of war, on the occasion of his appointment to the medical corps of the United States army, and given to the national museum in 1888 by a relative through Senator J. T. Morgan; a regulation sword worn by Gen. Thomas Shields when a subaltern officer in the United States army in 1838; a regulation sword carried by Gen. John A. Halderman during the Civil war; a sword and belt presented to Admiral S. D. Trenchard by the government of Great Britain for his services in saving from destruction the British bark Adieu when disabled off Cape Ann in August, 1856; a very old Damascus sword and scabbard, with ivory handle, and eight ivory and gold mounted knives of Arab manufacture, presented by the sultan of Zanzibar to Commodore R. W. Shufeldt; and a military cap and sword of General José Antonio Paez.

Several swords and other weapons in this collection were picked up on battle fields, and although the names of their owners are unknown, they serve as silent witnesses to the sacrifice of brave lives. Thus, there is a regulation sword of an infantry officer in the continental army; a sword which be-

longed to one of the heroes of the battle of San Antonio; a sword blade from the British frigate Rose, sunk in the Savannah river in 1779 by a squadron of French vessels commanded by Count D'Estaing who co-operated with the Americans in recovering the city of Savannah from the British; a side arm, or hanger, worn by a French soldier during the Revolutionary war; a short sword with wooden grip, presented to an Indian chief for good conduct by the first congress.

Although perhaps not strictly to be included in an article of this kind, it may not be amiss to make mention of some of the arms obtained during the Spanish-American war. Thus from Porto Rico and Cuba are exhibited swords of the municipal guard, a marine officer's sword, a general officer's sword, a noncommissioned officer's sword, a civil guard's sword, besides several machetes, sabers, cutlasses, etc., and two Toledo swords of the kind used by the militia of Porto Rico from 1650 to about 1850.

In a special case are shown a number of bolos from the Philippine islands. This is a generic word, including various kinds of weapons, such as the borong, carried by the official classes; the campilon, worn by officers of the Moro army; the punal de kris, a small dagger carried by women and children; various forms of kris, malay, bolos, or naval cutlasses of the modern Spanish form; terpilong, the official headsman's ax-sword; quinbasi, or pocket knife of the private soldier; pira, a sword used by the Moros; besides several daggers made from steel spear heads.

It would be unjust to our enlightened and generous government to close without reminding the reader that numerous other swords besides those herein mentioned have been presented by congress to military and naval heroes for gallant conduct, but it happens that they have not yet come into the national treasure house. Thus, at least fourteen swords are known to have been presented to heroes of the Revolutionary war, the Mexican war, and the Seminole insurrection.

STRATEGIC VALUE OF HER WEST INDIAN POSSESSIONS TO THE UNITED STATES.

BY W. V. JUDSON.

[William Voorhees Judson, captain corps of engineers, U. S. A.; born Indianapolis, Ind., February 16, 1865; educated Harvard, 1882; graduated West Point, 1888; graduated United States engineering school, Willets Point, N. Y.; now recorder board of engineers, U. S. A.; instructor military engineering, United States engineering school.]

If in time of peace we must prepare for war, it becomes necessary also in time of peace to contemplate the dangers to which we may be exposed in war, for only thus shall we make our preparations adequate, and along the right lines. If in the following article emphasis is laid upon the dangers rather than the advantages of certain conditions, it is but to bring out forcibly the means by which the dangers may be averted, as well as the advantages reaped.

In its broadest sense, strategy deals with all acts, diplomatic or political, civil or military, that make ultimately for a nation's strength in war. The accepted leaders of our people expect the policy of expansion in the West Indies and elsewhere to yield great increase of trade and new opportunities for the profitable use of American capital. It is generally believed that this policy will increase our national prosperity and our influence for the world's good in the council of nations.

Before passing to the more limited case of our West Indian acquisitions, it will be well to contemplate the general but strictly military consequences of possessing islands beyond the sea. Prior to 1898 the United States was the strongest of all nations on the defensive. Our population was self sustaining and could not be reduced to submission through blockade. On account of the difficulties of ocean transport no army could land and sustain itself for a successful campaign within our borders. The European power with which most frequently we had had serious complications in the past, and which most of all nations possessed means to annoy and harass our coasts, was deterred from any hostile undertakings

through fear of losing Canada. President Cleveland could be sure that his Venezuelan message would provoke no war.

Notwithstanding our great defensive strength we should have been in a very embarrassing position if at that time we had been called upon to enforce the Monroe doctrine against Germany, France or Russia. These nations were each superior to us upon the sea, and where else against either one of them might we even have attempted a hostile blow? We must admit that our offensive military strength, except as against England in Canada, was insignificant. This certainly appears to have been a dangerous situation for a nation traditionally attached to the Monroe doctrine.

When we acquired possessions beyond the sea, we lost in great measure our splendid defensive strength, while we added to our power to strike offensive blows. At the same time that we increased our ability to sustain the Monroe doctrine, and thus reduced the probability of war due to its violations, we increased the probability of war due to other causes, for we entered into contact with the world's great powers at a greatly increased number of points.

Whether the gain of offensive and loss of defensive strength leave us with a balance to the good is, in a measure, an indeterminate problem, the unknown quantities being indicated in the following questions:

1. Who will be our antagonist?
2. What preparations shall we make, in peace, to reap advantages from our new conditions?

In a war to-day with a great commercial power, equal or inferior to us in naval strength, we should undoubtedly find our acquisitions a distinct gain. But in a war with a power of considerably greater naval strength we should find that we had but acquired points vulnerable to attack, and several burning problems now agitating the public mind would be speedily solved by our opponent.

The relation of sea power to over sea possessions may be briefly stated in the light of history and of European policies. Of the five great European powers Russia alone has pursued a policy that enables her to ignore the command of the sea. With unorganized and inferior peoples upon her eastern and

southeastern borders, she has been able to extend her limits by the absorption of contiguous continental territory whose inhabitants are quickly assimilated. Why did Russia part with the Kurile islands in 1875, and with Alaska in 1867, if it was not to divest herself of distant possessions, recognized as sources of weakness to a nation whose military strength lay upon the land? And what isolated possessions does she now maintain vulnerable to British attack? It seems written upon the wall that, when land communication between Russia and India shall possess military advantages over water communication between Great Britain and India, the day of British rule in India shall pass.

Compare, further, the courses of the Spanish and Boer wars. Spain was vulnerable because of her outlying possessions. Her navy was not far inferior to ours, and her trained army was many times larger, yet Spain was overwhelmed in four months in battles that occurred far from the Spanish peninsula. On the other hand the Boers, with no navy and with but a handful of men, sustained themselves for nearly three years against an antagonist almost infinitely stronger, because the Boer territorial possessions were compact, and distant from the enemy's base.

Napoleon conquered Egypt in 1799, but the defeat of the French fleet at Aboukir drove him back to France. And why did Napoleon sell Louisiana to the United States but because that master of strategy recognized it as a source of weakness to France?

Another example is seen in the conduct of British military operations in 1781. In the month of March of that year De Grasse sailed westward with thirty six ships of the line, a sufficient force to give the allies command of the sea on the American coast. In the same month an English fleet sailed from Portsmouth under Admiral Darby. If the latter fleet had gone to North America, the command of the sea there would have been Great Britain's, Cornwallis need not have surrendered at Yorktown, and we might have been British subjects to-day. Why did not Darby sail for North America? Because Gibraltar in that event would have fallen. It was at that moment suffering from the horrors of a pro-

tracted siege, and famine and disease were about to cause its surrender. In that war England did not have perfect command of the sea over the combined Dutch, French and Spanish navies, and she found her outlying possessions, even Gibraltar itself, a source of weakness. In Beatson's Memoirs occurs the following: "A question was very much agitated in and out of Parliament, namely, whether the interception of the French fleet under the Count de Grasse should not have been the first object of the British fleet under Darby. . . . It would have insured the safety of the British West Indies. . . . and the campaign in North America might have had a very different termination."

Mahan, referring to the same question, says: "The conclusion continually recurs. Whatever may be the determining factors in strifes between neighboring continental systems, where a question arises of control over distant regions, politically weak,—whether they be crumbling empires, anarchical republics, colonies, isolated military posts or islands below a certain size,—it must ultimately be decided by naval power, by the organized military force afloat, which represents the communications that form so prominent a feature in all strategy. . . . Upon this will depend the control of the Central American isthmus, if that question take a military coloring."

The fact must be emphasized that all authorities agree upon this one point, that neither fortifications nor men can hold for more than a short time any possession distant from the primary base, unless the line of communications be kept open. And to keep the line of communications open means to obtain and retain the command of the sea.

Colonel Sir George Clarke, a great British strategist, has written an account of our recent war with Spain from which the following is quoted: "On the other hand, Spain was committed to the defense of Cuba, which, as in all such cases, was possible only if maritime communications with the mother country could be maintained. Writing in June, 1897, Captain Mahan referred to the pre-eminent intrinsic advantages of Cuba, or rather of Spain in Cuba; but these advantages could be turned to account only if naval supremacy in West Indian waters could be asserted. Assuming the

latter condition, Porto Rico, with the fortified port of San Juan, 1,000 miles from Havana and 5,300 miles from Cadiz, was also a strategic point of importance. Failing this condition, both Cuba and Porto Rico were necessarily sources of weakness, and their fall was merely a question of time depending upon their power of military resistance on shore."

The following extracts are from an anonymous British source. The author is vouched for by Brassey and his views are well expressed and harmonious with current expert opinion:

"It is often said, when an additional station is proposed, that a new establishment, if it does not do any good, will at any rate not do any harm. The worst of this statement is that it is not true. Every station beyond the requisite minimum not only does do harm, but also in war may be the cause of much and grievous harm. In peace time its maintenance causes useless expenditure and complicates the storage and issue of supplies. Many stations of the class in question produce few of the articles deposited in their magazines; none produce all, some produce none. In certain cases the local production of food is not enough for their regular inhabitants, much less for their inhabitants plus their garrisons. It is obvious, therefore, that in time of war the necessary stream of supplies and reinforcements must flow to them with the least possible interruption. In other words, their communications must be kept open. As the line of these communications runs across the sea, the duty of keeping them open must be discharged by the navy, and by the navy alone. Argument and experience both show what a heavy burden this is for a fleet. Should any one wish to learn the verdict of history on this question, let him turn to the case of Darby's relief of Gibraltar, and let him note the connection of De Grasse's movements with it, and its general effect on the campaign."

Some of the lessons we should learn from history are then the following:

First.—A nation of any considerable size and military spirit, compact as to its territorial possessions, even if without a navy, is practically unconquerable, if it possesses the advantage of remoteness from its enemy's primary base.

Second.—As corollary to the proposition above stated, it may be held that a nation possessed of the predominant sea-power may add to its isolated colonial possessions ad libitum. With its fleets in being, it is almost if not quite as easy to protect one hundred as ten outlying possessions, or if not to protect them during all phases of war, at least to end the war with its original possessions.

Third.—Outlying possessions of any nation are in time of war at the mercy of an adversary possessing decided control of the sea.

These truths are almost self evident. It is the dictum of Von Moltke that the first principles of strategy do not rise above the level of common sense. The practical conclusion forced upon us is that if we would surely profit by our possessions abroad we must build and maintain a navy equal to any but Great Britain's. We must still rely upon Canada as a sufficient bond that Great Britain will preserve the peace, for no one at this time would venture to commit our country to a contest of expenditures for naval supremacy with that great empire of the sea. The military value of any outlying possession is determined by its position relative to lines of communication.

In the West Indies, England holds Jamaica and Santa Lucia, and France holds Martinique. Cuba (for naval purposes), and Porto Rico, belong to the United States. Santo Domingo, belonging to no great power, might be seized by any in case it came to have a war time importance. There are no other West Indian islands of any special present strategic value.

Cuba possesses several excellent harbors, among them Havana, Cienfuegos and Santiago. Havana lies upon the flank of the Straits of Florida and Santiago close to the Windward passage.

Santo Domingo has excellent harbors at Mole St. Nicholas and Samana bay, near the Windward and Mona passages, respectively.

Porto Rico, lying between the Mona and Anegada passages, has upon the main island no harbors that are especially fit for naval stations, although there are several that

might be used at a pinch. San Juan harbor lies so close to the sea that an enemy might destroy docks and the like by bombardment. Fajardo is very open, but might be made to serve if expensive breakwaters were constructed. Ponce and Mayaguez harbors are also very open to the sea.

Culebra, a small island to the east of and pertaining to Porto Rico, possesses an excellent harbor, better probably for war purposes than any in Porto Rico, and very nearly if not quite as good as the harbor at St. Thomas. Culebra is uninhabited and lies, as does St. Thomas, close to the Anegada passage.

There is such a thing as an embarrassment of riches in the way of harbors suited for naval bases. In the late war our navy would have been seriously inconvenienced at Santiago had not the neighboring Spanish harbor of Guantanamo served it as a temporary base. It is readily seen that every harbor we own which is suitable for naval purposes by conformation, depth and position, unless fortified or made secure through command of the sea, may be utilized by an enemy for hostile operations.

If other things were nearly equal, a naval station in Porto Rico might conceivably have great advantage over one at St. Thomas. Porto Rico might be made self sustaining during blockade, which St. Thomas could never be; and if our authorities determine to establish a naval station at San Juan, for example, it would be a military measure of great importance to encourage the people of the island, by bounties or otherwise, to become a food exporting people. It would be a further exhibition of military foresight if we so endeared the population to our institutions that they would fight an invader in the way a people fight for home and liberty.

In the event of war with a superior naval power, as the latter might assume command of the sea in any part of the world, any naval station of ours there would find its communications with home ports broken. At a time, by a method, and with a force of his own choosing, the enemy could attack, and he could reinforce and bring up supplies at will. The fall of our naval station could be but a matter of time unless it

were situated upon a self sustaining island possessing a large and devoted population.

The value of a naval station upon a line of communications may be summed up as follows:

1. It constitutes a base, due to the immediate proximity of which an inferior force may raid the commerce of an enemy or protect its own commerce.

2. It tends to deter the enemy from passing by to engage in other operations. Like an army, a war fleet must keep open its line of communications. For upon it will be passing at all times, in one direction or the other, dispatch boats, colliers, supply ships, crippled war vessels and reinforcements.

The Windward, Mona and Anegada passages are the only navigable breaks in the northern barrier enclosing the Caribbean sea.

When the isthmian canal shall have been constructed, it will be approached from Europe most conveniently by the Anegada passage, and from Atlantic ports of the United States by the Windward and Mona passages. Each passage will become the highway of a great commerce. No matter how strongly the isthmian canal may be fortified, it would, in war, serve us no purpose—indeed through war, we might lose it entirely if our fleet could not control its approaches. In this connection it may be observed that if our fleet did control such approaches, the only confications needed would appear to be of a minor character designed to prevent raids.

In closing we may sum up the case as follows: The possession of distant islands weakens the United States defensively. So also would the construction of an isthmian canal without the building of an adequate navy. For offensive operations as bases for our mobile force—the navy—distant islands, properly located, increase our strength materially. The construction of an isthmian canal would also add to our offensive strength, in that it would tend to facilitate the distribution and concentration of our offensive arm.

The main point is that no possible good, in war, can result from canal or our West Indian possessions, unless we possess an adequate navy.

THE NATIONAL SOLDIERS' HOME.

BY EMERSON O. STEVENS.

[Emerson O. Stevens, author, has been an active promoter of legislation for the benefit of soldiers' homes in America; he has made a thorough investigation of the principal institutions for the care of the disabled volunteer soldiers, and by his pen has called attention to the needs of such legislation, and has been successful in securing more adequate provision for the veterans.]

An army of 26,705 men, an army larger than the combined infantry, cavalry and artillery forces of the regular standing army before the outbreak of the Spanish war, is an army which the United States government is maintaining—is clothing, feeding and sheltering—not for the purpose of invasion nor for defense nor for military display, but because of former service faithfully performed. This army of over twenty six thousand men is simply the number of old soldiers cared for by the United States government in the various branches of the national home for disabled volunteer soldiers.

A city of more than six thousand inhabitants, with miles of shady streets, with post office, theater, club, hotel, a court of justice, a bank, libraries and reading rooms, a cemetery, stores, waterworks, a fire department, churches, hospitals—a city where each citizen receives free of charge his board, clothes and lodging, together with care when sick, where more than five sixths of the citizens receive in addition allowances of from six to seventy two dollars a month paid in gold, and where no citizen need do a stroke of work except to make his own bed and to pare potatoes once in nine weeks—such a city represents a single branch of the national home for disabled volunteer soldiers.

Hawthorne, writing in 1862, used these words: "It is very seldom that we can be sensible of anything like kindness in the acts or relations of such an artificial thing as a national government. Our own government, I should conceive, is too much an abstraction ever to feel any sympathy for its maimed sailors and soldiers, though it will doubtless do them a severe kind of justice as chilling as the touch of steel." Never perhaps was there a more striking example of pessimistic false

prophecy. The national home for disabled volunteer soldiers, to say nothing of the colossal pension roll, is a refutation of the charge of the ingratitude of republics, of this republic at least. From its establishment in 1865 up to June, 1897, it had cared for 88,000 disabled volunteer soldiers.

By poets, curiously enough, and not by warriors, the idea of the soldiers' home was conceived. William Cullen Bryant, Henry Wadsworth Longfellow, with Horace Greeley and others, were among the first movers in the matter of a national home for volunteer soldiers. They embodied their ideas in a memorial, which was presented to the senate on the eighth of December, 1864, in which they asked congress "to make suitable appropriation, or to take such other action in reference to the subject as the representatives and the states shall deem proper, to promote an object of such vast national importance and so pregnant with the interests of thousands of citizens of the union who have given all their best energies to their country and who have been rendered helpless by such devoted service."

To this petition were subjoined the names of many of the most distinguished people in the country, both men and women. Congress, with admirable promptness, granted the petition by passing a law, in March, 1865, for the establishment of the home. By this act a corporate body was created, and in this corporation were enrolled the names of a vast proportion of the eminent men of the country. The business of this corporation was intrusted to a board of managers; and in March, 1866, the statute was so amended as to include in the board of managers, ex officio, during their term of office, the president of the United States, the secretary of war, and the chief justice of the United States. The first meeting of the board of managers was held in Washington, May 16, 1866. At this meeting there were present Chief Justice Chase, Edwin M. Stanton, secretary of war, Major General Benjamin F. Butler, Governor Frederick Smythe, Major General P. J. Osterhaus, Hon. George H. Walker, Jay Cooke, and Hon. Lewis B. Gunckel. They elected as officers Major General B. F. Butler, president; Major General P. J. Osterhaus, first vice president; Hon. George H. Walker, second vice president; Hon. Lewis B. Gunckel, secretary.

The national home for volunteer soldiers consists of seven

branches, all under the direction of the board of managers and each under the immediate supervision of a governor, who is appointed by and is responsible to the board. These branches are, in the order of their establishment—eastern, at Togus, Maine; the central, at Dayton, Ohio; the northwestern, near Milwaukee, Wisconsin; the southern, near Hampton, Virginia; the western, at Leavenworth, Kansas; the Pacific at Santa Monica, California; and the Marion, at Marion, Indiana.

The national home, in these seven branches, occupies between four and five thousand acres of ground; and its land and buildings together have cost over five million dollars. It is maintained at a cost to the government of over three million dollars annually. Previous to 1875 the branches were established and supported by all stoppages or fines adjudged by court martial or military commission against volunteer officers, soldiers or seamen, by forfeiture on account of desertion from the volunteer service, by money due deceased volunteers which remained unclaimed for three years, and by treasury drafts. Since 1875 the home has been maintained by direct and specific appropriations by congress. The nation has thus far, for buildings, land and maintenance of the home, devoted between forty five and fifty million dollars to the support of its disabled soldiers,—surely a not entirely ungrateful and unsympathetic republic!

What does this vast amount of money represent? What do the veterans get for it? Is it a stern kind of justice as chilling as the touch of steel? Some account of the work of a single branch will give a better idea of the scope and extent of the whole than an attempt merely to describe all in general terms. For this purpose the central branch, as being the largest and most important branch of the home, may be selected for description, although any description in the space at command must be inadequate.

Doubtless most people who have heard the words, soldiers' home, have not given them sufficient attention to form a conception of their meaning. If asked to give their idea of a soldiers' home probably nine out of ten would find their amorphous impressions slowly crystallizing into a notion not widely different from that of the writer before a visit to the

Dayton home,—which was of a long brick building, with trees and garden seats, and an iron fence in front. Nothing could be more remote from the reality. The Dayton home is literally a city, complete in itself. It occupies a square mile of ground three miles west of Dayton, a beautiful city of 85,000 inhabitants, and there are few more lovely spots, both in point of natural advantage and tasteful improvement. Situated on a high plateau which overlooks for miles the beautiful valley of the Miami, the grounds have been laid out so as to preserve and increase their park like character, and the visitor is constantly under the impression that he is wandering through some beautiful public park. Miles of smooth, wide macadam road wind about, now through shady hollows, now up on a sunny hill, whence the eye sweeps over a wide expanse of peaceful rural beauty, now past conservatories, flower gardens and rare plants and trees, now along the margin of a placid lake or the boundary of a park where browse peacefully a herd of graceful deer.

The central branch of the soldiers' home is the largest institution of its kind in the world. Its six hundred acres of ground have cost nearly one hundred thousand dollars, and it has nearly a hundred buildings, all of them large, which have been erected at a cost of nearly a million and a half of dollars.

The soldiers' home at Dayton is visited by multitudes of people, many from far places. During the year ending in June, 1896, over 315,000 people visited the grounds, including forty eight special excursions. To see in one day everything to be seen would more than tire out a vigorous walker. In Dayton all roads lead to the soldiers' home,—or nearly all street car lines. Three different lines run to the grounds. At the principal street car terminus is a neat station and waiting room for visitors, at which an electric car arrives from the city every two minutes.

From the main entrance roads lead in various directions. Proceeding up the center road, which winds in its ascent over a succession of terraces, we come to headquarters. Headquarters is a large three story brick building, facing south, and distinguished from all other buildings on the grounds by the national flag floating above it. This is the executive depart-

ment of the home. Here are the governor's office, the adjutant's office and the bank. The bank, which occupies half the lower floor of the headquarters building, is no trifling institution. It performs most of the functions implied by its name. From the bank is paid out to the pensioners in the home every three months about $175,000 in gold, or nearly three quarters of a million dollars a year. Of the six thousand inmates, over five thousand draw pensions. The pensions range in amount from six to seventy two dollars a month. In the different state homes for volunteer soldiers, of which there are twenty six in the country, half the pension of the soldier is withheld towards his partial support. In the national home the soldier receives the full amount of his pension, without any deduction, in addition to his clothes and support. A considerable proportion of the money received by the pensioners is sent home to their families. A good idea of the magnitude of the national home may be gained from the amount of money and the number of packages passing through the post office of the central branch alone, which occupies a separate building near the main entrance. During one year $46,138.12 was sent out of the home through the post office in money orders and postal notes. During the year there were handled in the post office 691,065 pieces of mail. Letters and postal cards to the number of 216,810 were mailed, and 212,650 letters and postal cards were received; 37,960 newspapers and packages were mailed and 223,745 were received.

With headquarters as a starting point, a stroll through the grounds of the home is one long to be remembered. Immediately in front of the headquarters, looking south, is a large lawn or campus of several acres. In the center of this is a gayly painted and picturesque pagoda, where an excellent band of thirty four pieces plays each afternoon in pleasant weather. The selections are a judicious mixture of popular airs and classical pieces, and the music is a most interesting feature of the day.

Everywhere, bluecoats!—for in this city of over six thousand inhabitants only one hundred and six are civilians. Bluecoats we see everywhere,—here one asleep by himself under the shade of a friendly tree, there a group in the shade of

a building, some busy, others idling. Some shuffle along with the palsied unsteadiness of decrepitude; others, so far as a casual glance reveals, are in robust health. Passing along one of the drives I heard the sounds of talking and laughter. They proceeded from a shady nook beside the road, half hidden by thick shrubbery, where half a dozen bluecoats were seated about a rustic table talking and joking sub tegmine fagi; while farther away, breaking in upon these cheerful sounds, I heard with a shudder that horribly hollow, gasping rattle of a cough, the sound of which no one can mistake, and I saw, faltering along in the sunshine, the victim on whose features the dread disease had placed its seal, the letters of which read death. In another place I noticed beside the road, appearing from underground apparently, the black hat, then the blue coat, and finally the entire form of an old soldier. Proceeding I gazed down into a most beautiful grotto, entirely overshadowed by trees and enlivened by the cheerful sound of falling water. Stone steps led down to it from the road, and a number of veterans were below quenching their thirst in the cool water of the spring. They have other sources for quenching their thirst, as we shall see.

The piping time of peace may perhaps be nowhere so vividly realized as here. If nine out of ten of the inmates seem to carry canes, it would not be much of an hibernicism to assert that eleven out of every ten have pipes in their mouths.

The home is under military organization, and everywhere we meet with military terms. The lodging houses of the veterans are known as barracks. These barracks are thirty five in number, two and three stories high, and are grouped upon eleven different avenues named after as many different states. The older buildings are of wood, the newer ones of brick. All are thoroughly lighted, heated and ventilated. They are all tree embowered, and have broad verandas at each story. There is ample space between the buildings, with greensward and walks and beds for the cultivation of flowers and small shrubbery, in which many of the members occupy much of their time in summer. Each barrack is in charge of a captain, who is appointed by the governor from the members of the home, and is responsible for the care and conduct of the

men under him. Within, everything is immaculate. Long rows of iron beds line each side of the long room. Each man must keep his bed and the space about it neat and clean. Most of the barracks contain each several hundred men. They retire at nine o'clock and rise at five. A pathetic sight is a barrack for the blind. Four readers for the blind are employed. The colored members have a separate barrack. New members of the home, before they are admitted to any barrack, must go into quarantine. They are taken to a barrack for that purpose, where they must bathe and are supplied with second hand clothing until transferred. Godliness in the home is not imperative, but the next thing to it is insisted upon, for each member of the institution, will he, nill he, must take a bath once a week. Every week each barrack receives tickets for each inmate, and if within a certain time every ticket has not been presented at the bath house the unfortunate delinquent is caught and made to take his bath.

Conveniently situated within the group of barracks is the mess hall. Here over three thousand men sit down at the first table every day in the year. Two sittings are required, each meal, to accommodate all the members. It is a sight worth seeing, to watch the veterans file in, three full regiments of them, and seat themselves at the sound of the gong. Another gong, and they "fall to't yarely." The food provided is good and wholesome and of abundant quantity. The bill of fare for Sunday is: Breakfast—ham or sausage, potatoes, bread, butterine, coffee; dinner—roast mutton, potatoes, string beans or lima beans or dried peas, pickles, bread, butterine, coffee, pies; supper—stewed dried fruit or watermelons or fresh berries, sugar cookies, bread, butterine, tea. Monday: Breakfast—baked beans with pork or beef fricassee with hominy, bread, butterine, coffee; dinner—vegetable or bean soup, roast beef, pickles, bread, potatoes, crackers, butterine, coffee; supper—corn meal or rolled oats, syrup, bread, biscuit, butterine, cheese. And so on through the week. The weekly bill of fare is changed every quarter. The amount of food consumed at each meal is staggering. For the Sunday breakfast, 2,800 pounds of ham or 2,950 pounds of sausage are consumed. For each meal when potatoes are served, it takes 34

bushels. 800 pounds of bread and 175 pounds of oleomargarine are consumed at each meal. If pickles are served it takes 30 gallons. The home is evidently within the great pie belt, for 1,250 pies are eaten at dinner. It requires 450 pounds of beans, when they have baked beans. 180 pounds of coffee and 135 pounds of tea are consumed at a meal. 50 gallons of syrup are required for their corn meal. It takes 1,050 quarts of berries to a meal. If soup is served, from 500 to 750 gallons are made, according to the kind. A feeble attempt to satisfy the Teutonic element is made by serving 282 pounds of sauerkraut at a meal. 2,500 cantaloupes are served at a meal. On two mornings of the week corned beef hash is served for breakfast, and it requires 4,000 pounds of it each meal. Two tons of hash is a serious matter. It requires for a meal 4,250 pounds of spinach or 56 bushels of onions. One learns with apprehension that 2,640 green cucumbers are served at a meal. Of fresh lake trout 2,950 pounds are served at a time—and so on. Whatever else the lot of a member of the home, he does not go hungry. To feed and serve this army three times a day requires 126 cooks, 238 waiters, 159 dishwashers, 44 bakers, 18 butchers and 22 bread cutters, to say nothing of 49 farm hands and 54 gardeners. The only compulsory duty of members not otherwise employed is kitchen duty, such as paring potatoes, etc. This duty comes to each man about one week in nine.

The oldest and one of the largest buildings on the grounds is the hospital. The main building is a huge structure of cherry colored brick, three stories high and 293 feet long. The number of cases treated in the hospital during the last year was over two thousand, while the total number of cases treated among members, each case being counted but once during the year, was over six thousand. Perhaps no other feature of the home appeals so directly to what the infirm soldier needs as the hospital. Here he receives all that the best medical skill and kindest nursing can give. No service in the hospital is performed in a perfunctory manner. Each patient is sure that he has done for him all that can be done; and those who have been in the hospital for treatment speak of it with enthusiasm. One of the members with whom

I talked said that he was out on furlough most of the time; "but," said he, "I am subject to the inflammatory rheumatism, and when I get that, or anything else is the matter with me, I make a break for the soldiers' home." Such testimony is a valuable tribute to the skill, kindness and earnestness of the hospital corps. "Chilling as the touch of steel" does not apply to the tender touch of the hospital nurse.

"A club," says Dr. Johnson, "is an assembly of good fellows, meeting under certain conditions." A visit to the veterans' clubhouse would convince any visitor that under the above definition it fully justifies its name. One scarcely expects to find in a home for disabled soldiers a complete modern clubhouse; nevertheless, there it is. The club is a new building in the renaissance style, and is perhaps architecturally the most pleasing on the grounds. It was built to meet most of the requirements of a modern clubhouse. A large central hall divides the building into two sections. On one side of the lower floor is the billiard room, overlooked by two tiers of galleries, back of which are small rooms for various club purposes. The opposite side of the entrance hall is occupied by two large halls, the upper one of which is used by different organizations of the members, such as the Grand Army of the Republic, the Union Veteran union, the Union Veteran league, and the Naval Veterans' association. The lower hall, known as the social hall, is used by the members in common for visiting, reading, writing, card playing, chess, etc. Billiards, bowling, cards, chess, and other amusements are provided for. Every member of the home is thereby a member of the club so long as he conducts himself properly. There are no committees, no blackballing. As we visit this clubhouse and watch these battle scarred warriors in friendly contest over billiards or seven up, we cannot help contrasting the perfect peace and security of their present life with the horrible scenes of carnage, toil and privation which they have experienced.

Nothing seems to have been omitted for the comfort, care and entertainment of the veterans. When I was told that they had a theater, I imagined a kind of hall with a platform. I was surprised to find it to be just what it was said to be, not a lecture hall, but a complete theater. Through a spacious

foyer, paneled in harmonious colors and paved in mosaic, you come into a first class, electric lighted, steam heated, modern theater, which in size, appointments and tasteful embellishment would compare favorably with more than one metropolitan theater. The house is carpeted, and the chairs are upholstered theater chairs. The theater has a seating capacity of over fifteen hundred. On either side of the stage are boxes, and there are the usual balcony and gallery of the modern theater. The stage is fully equipped with scenery, and its appointments in the way of dressing rooms and other conveniences are superior to those of most theaters. The building, one of the most conspicuous on the grounds, was erected in 1880. It faces the east, and in front of it the ground descends rapidly, while from its lofty tower there is a view for miles over the Miami valley, including the city of Dayton. The prices for admission are low, and parts of the house are reserved for members under certain conditions free of charge. Visitors are admitted to the theater. The best talent in the amusement world is engaged each season. Shakespeare's plays, the standard dramas, comic opera, and the best orchestras are engaged every year.

Near the theater stands the Protestant chapel. It is a beautiful Gothic structure of native freestone, faced with a light red stone, and its walls are nearly covered with a thick growth of American ivy. The Catholics have a separate place of worship of their own in a handsome brick chapel erected during the last year. Religious worship is of course purely voluntary. Services are frequently held by the Women's Christian association of Dayton, and in the summer grove meetings are held from time to time by the Salvation Army and the Christian Alliance.

One of the most interesting spots on the ground is the library, a spacious three story building, sheltered by trees, on Ohio avenue, directly in the rear of the theater. The lower floor is occupied by the reading room, and it was gratifying to find this room completely filled with veterans. Here 200 newspapers are received daily, and 39 different magazines are on file, including the standard English, German and French periodicals. All the better American magazines are here.

The library proper is on the second floor, where are stored, in two tiers of bookcases, the books of the George H. Thomas library and the Putnam library.

"The war," says Lowell, in one of his most charming essays, "was ended. I might walk townward without the aching dread of bulletins that had darkened the July sunshine and twice made the scarlet leaves of October seem steeped in blood." He refers to the death of his three nephews in the war. One of these ensanguined Octobers brought the death news of Lieutenant William Lowell Putnam, the poet's youngest nephew, a member of the twentieth Massachusetts regiment, who fell mortally wounded, October 21, 1861, at the battle of Ball's Bluff, while trying to save a wounded comrade. When taken to the hospital he said to the surgeon: "Go to some one else to whom you can do some good; you cannot save me." To such a spirit, chivalrous in no degree less than the gentle Sir Philip on the field of Zutphen, a worthy memorial was due; and perhaps no more fitting tribute to the memory of the young hero could have been conceived than the library which his mother, Mrs. Mary Lowell Putnam, has founded for the benefit of the veterans of the central branch of the soldiers' home. The Putnam library was established in 1868, and numbers over ten thousand volumes. Its founder continues her benefactions yearly. Mrs. Putnam has also presented to the library a number of pictures and works of art. I noticed particularly a large glass case filled with beautiful specimens of Muradabad enameled brass. An asylum for old soldiers is scarcely the place where one would look for East India metal work. Beside the entrance door is a life size portrait of Lieutenant Putnam, in the perfection of youthful beauty and manliness. "For now he haunts his native land as an immortal youth." Above the portrait was a magnificent wreath, and it was explained to me that on each anniversary of the death of Lieutenant Putnam there comes a wreath of flowers, exquisite in beauty and arrangement. This wreath is placed above the young hero's portrait, there to remain until, a year later, another comes to take its place.

In the same building with the Putnam library is the George H. Thomas library. This library contains between nine

and ten thousand volumes, and embraces all the books of the home not belonging to the Putnam library. The libraries are catalogued separately, the catalogue of each library forming a large octavo volume of several hundred pages. In these two libraries are over twenty thousand volumes of standard literature and over two hundred of the best newspapers and magazines in the world. Surely a harsher fate could be imagined for one whose deeds were behind him than to have his "hours, days and years slide soft away" in this place of peace and quiet, with no cares and scarcely even nominal duties, and with the treasure house of the world's wisdom open to his touch at any time.

The reading room is open daily from eight in the morning till eight in the evening. The books are issued for two weeks, and may be renewed, or may be changed as often as desired. That the library is not unappreciated is indicated by the number of books drawn, which in one year amounted to 46,592 volumes. The volumes are classified as fiction, history and biography, travels, science and art, poetry and drama, religion and philosophy, and general literature. I was interested to know what class of books was most read, imagining that with a constituency of men only, and one would suppose hard headed fellows too, history or biography or travels would lead; but I was told that, as in most public libraries, fiction is in the lead. About seventy per cent of all books drawn are works of fiction. This is partly amusing, but on the whole pathetic. What should these old broken down warriors,—stranded hulks, battered and broken by the sea of life, —whose average age is sixty four years, what should they have to do with love and the sweet dreams of tender maidens? Do they thus seek to call back in faint outline the dim ghosts of the lost illusions of their youth, or do they use fiction as an anodyne for their futureless and unhopeful condition?

Interesting as the library is, not far from it is another building yet more interesting in some ways, from its singular character and the problems that it presents, than even the library. This is the true Valhalla of the veterans, haunted by the shade of many a departed warrior. The building is the beer hall, a large building pleasantly surrounded by trees. The hall

proper is somewhat over a hundred feet long and proportionally broad. No civilian can for love or money buy a glass of beer in the hall, —nor may he even set his foot within it. Down the center of the hall extends a double counter. On each side of the building, next to the wall, is a row of tables, extending the length of the room. As one stands at the door and gazes down the long room, one is reminded of a huge fly trap filled with bluebottles. The bluecoats are so thick that there is scarcely room to walk, and the buzz of voices makes it difficult to converse. Every table is full, and between them and the bar there is a constant progression and retrogression of veterans with empty and freshly filled glasses. White aproned Ganymedes behind the bar dispense the nectar to the war gods. The ambrosia is in the form of black bread and cheese made into sandwiches, which are served free, as a lunch. There are eight bartenders, and they are kept constantly busy. Four guards preserve order. The hall is in charge of a special officer, who is responsible to the governor for its proper administration.

During one year the receipts from the sales in the beer hall amounted to over $91,000. Nearly two million glasses were sold. This seems a large amount of beer for one institution; but it must be remembered that these six thousand members of the home represent the voting population of a city of over twenty thousand inhabitants. The number of glasses sold in a year does not amount to one glass a day for each member. No institution in the soldiers' home has received such criticism as the beer hall, and probably there is none of which the wisdom is less to be questioned. Almost every objection to it has been shown by facts to be groundless. Drunkenness among the members has decreased; there are fewer men arrested by civil authorities; there is a smaller number in the hospital as a result of protracted debauches on bad liquor; more money has been sent by the inmates to their families; and the order and discipline in the home are much better. The beer sold is the best. No member buys his beer over the bar, but must purchase at the office a ticket, which he exchanges for his beer. In this way a check is kept upon the men. Restrictions are placed upon hundreds of the men, many of them

being entirely debarred from the beer hall, and others being limited to one or two glasses a day, according to their physical, mental or moral condition. A large number are content with what they get at the hall and do not drink outside at all. The profits accruing from the sales of beer within the home go to the post fund, which is used for the expenses of the band, for amusements, for the purchase of books and for other matters not provided for by congressional legislation.

Among these six thousand soldiers from nearly every state in the union there is a great variety of character. Many of the men are enfeebled, not only physically, but mentally and morally. There is less self restraint among them than among younger men; consequently some of them need careful watching and firm handling. The government of the home is a pure autocracy. The word of the governor is law. Every morning at eight o'clock a police court is held, at which the governor presides and the offenders receive sentences ranging from a curtailment of their beer to dishonorable discharge from the home. There is no appeal from the sentence of the judge; but the soldier, even if sentenced to imprisonment, can always escape punishment, for he may at any time obtain his discharge from the home, either honorably or dishonorably. The dishonorably discharged member can be reinstated only by the unanimous concurrence of the board of managers.

The occupations of the members are classified under 105 different headings; the range is from lawyers and ministers to chiropodists and peddlers, including five actors, one editor, eight civil engineers, thirteen lawyers and seven ministers; over two thousand are classed as laborers, and 1,365 are farmers. About one fifth of the members have wives or minor children. Over two thousand are employed in the home in various capacities, with pay ranging from a few dollars a month to a respectable salary. Members may usually spend as much or as little time in the home as they please. When in residence, they must show passes to leave the grounds, but they may be out for an indefinite time on furlough.

In the laundry over two million and a half pieces are handled annually. There is a store where nearly every conceivable thing used by men is on sale, and the sales amount to $40,000

annually. There is a hotel on the grounds, which does a thriving business. There are also an express office and an office of the Western Union telegraph company. All the uniform clothing for the seven branches of the home is manufactured here in the huge property building. This is a massive Romanesque building, over four hundred feet long. In this building are also located the bookbinding and printing establishments.

There is on the grounds a fire department, with steamer, hook and ladder truck, hose cart and all the essentials of a metropolitan fire station. The home has an independent system of waterworks, with a pumping capacity of 2,500,000 gallons a day. Not the least interesting feature is the system of tunnels under the main streets. These are nearly four miles in length, are constructed of brick, over six feet in the clear and wide enough for three men to walk abreast. They are lighted by gas and contain over fifteen miles of steam and hot water pipes. A battery of thirty eight boilers furnishes steam and hot water for the institution. The refrigerating and ice making machine has a capacity for making twelve tons of ice every day and cooling fifty thousand cubic feet of cold storage space.

Out past the hospital buildings and past the flag staff, with its battery of cannon, which have long since ceased to volley and thunder,—at the extreme northern limit of the grounds of this soldier city at Dayton, amid gently undulating slopes and beneath whispering leaves, with a peaceful outlook over the broad valley, is another city, the city of the dead, which contains more inhabitants than the city of the living. The cemetery is laid out in the form of a circle. In the center, in the middle of a circular drive, stands the monument, a figure of the American soldier, musket in hand, at parade rest, carved in granite and mounted on a Corinthian column that once formed part of the colonnade of the old United States bank at Philadelphia. It stands on a pedestal having an allegorical figure in Parian marble at each corner, representing the different branches of the service. Sloping in gentle declivity from this monument to a wide circular drive far beneath, the greensward is dotted by white marble headstones, which mark the last resting place of the soldiers. The members of the home are carried off at a rate which averages more than

one a day. Three members of the home can sing no more cheerful lay than: "A pickaxe and a spade, a spade"; for the three grave diggers are kept constantly employed. There are also eight undertakers. When a member dies, the flag is displayed at half mast during his funeral, and he is buried with military honors.

This meager account of the central branch of the national home, if somewhat monotonously statistical, may nevertheless serve to indicate in a measure how completely and with what attention to detail the nation is caring for its disabled defenders. What has been said of the central branch may be said in general of the other branches. The central home was chosen for description because it is the largest—having over twice as many members as any other branch—and in a sense a kind of administrative center, because here the clothing for all the other branches is manufactured, and the board of managers has recommended that this branch be made a depot for the storage of supplies for the other branches, to be issued to them on quarterly requisitions. Each of the other branches, however, though none of them so large as the central branch, has adequate appointments for the comfort, care and entertainment of its inmates.

The central, the northwestern, the southern and the eastern branches were all opened under one act of congress, which was approved in March, 1866. The eastern branch, at Togus, Maine, was the first to be ready, and received its first inmates in the same year that the act was passed. The eastern branch has never been one of the largest, but it is an important branch of the home. Its grounds comprise over seventeen hundred acres, or over twice the number possessed by any other branch, while its buildings have cost nearly half a million dollars. It stands fifth in the number of inmates.

The southern branch, situated near Hampton, Virginia, which received its first inmates in 1870, is, after the central branch, the largest in point of numbers. Territorially it is much the smallest of any of the branches, occupying only twenty six acres, but its buildings have cost over $800,000. During the year 1896 two barracks were constructed at a cost of $25,000.

The northwestern branch, which occupies 382 acres near Milwaukee, was the third of the four branches provided for by the original act of congress. It has always been a very important branch, ranking third in the number of inmates. Its buildings have cost over $600,000, the last being a commodious headquarters building recently completed at a cost of $10,000. This branch was opened in 1867.

These four branches, the central, the eastern, the southern and the northwestern, accommodated the disabled veterans of the war for nearly twenty years, when the need of another branch began to be felt. Accordingly, an act of congress was passed and approved July 5, 1884, to authorize the location of a branch home for disabled volunteer soldiers and sailors, in either the state of Arkansas, Colorado, Kansas, Iowa, Minnesota, Missouri or Nebraska. The site chosen for the new branch was at Leavenworth, Kansas. The western branch was opened for use September 1, 1885. The land for this branch, 640 acres, was donated, and buildings to the value of over half a million dollars have been erected. The grounds of the western branch form a pleasure ground and park for the city of Leavenworth, and are daily visited by hundreds of people.

Santa Monica, in southern California, has been called the Coney Island of the Pacific coast. Here the Pacific branch was established, on donated land, under an act of congress approved March 2, 1887, entitled an act to provide for the location and erection of a branch home for disabled volunteer soldiers west of the Rocky mountains. This branch was opened for use on the first day of January, 1888. The buildings of the Pacific branch have cost nearly $500,000. The grounds are very beautiful, adorned as they are with plants, shrubs, and trees to which the harsher climate of the east is not favorable.

The Marion branch, at Marion, Indiana, was authorized by an act of congress approved July 23, 1888. It was opened March 18, 1890. Its land and buildings have cost a little over half a million dollars. This branch has a number of handsome modern buildings, including the fine Stinson memorial hall and a new mess hall which will accommodate at one sitting 1,072 members, comfortably seated in chairs.

These eight branches constitute the national home for disabled volunteer soldiers. The best testimony to the wise and liberal management of the home is the crowded condition of all the branches.

The last branch established is the Danville branch at Danville, Illinois. The act authorizing this new branch became a law June 4, 1897. The sum of $150,000 was appropriated for the establishment, which covers 222 acres of ground.

Besides the national home for volunteer soldiers, there are twenty six state homes in twenty five states. To each of these state homes the board of managers of the national home pays $100 per year for each inmate, less one half the sum retained by each state from the pensions of the men toward their partial support. These twenty six state homes have over ten thousand members on their rolls, with an average attendance of over eight thousand. The state homes are under the inspection of the board of managers of the national home, and their numbers are increasing rapidly.

In the national home in all the branches there are at present survivors from the Civil war, the Mexican war and the Indian wars. These men have every comfort, and are on the whole much better off than the average workman in civil life. Wise provision is made for their entertainment and amusement. The restraints are few and reasonable, being only such as are necessary for a body of men of every shade of character. Indeed, one might almost say that Uncle Sam has, with few limitations, adopted for the inmates of this institution the rule proposed by Gargantua for the abbey of Theleme: Do what thou wilt.

Doubtless the ravages of fever and disease in the recent volunteer army will have served to prepare many a future candidate for the soldiers' home; and no one of them, should the coming years find him homeless or friendless or disabled, ought to look forward with apprehension to spending there his remaining years. He will find not a stern kind of justice as chilling as the touch of steel—but rather the loving and tender ministrations of a mother to a dutiful son.

THE AMERICAN PENSION SYSTEM.

BY WILLIAM H. GLASSON.

[William Henry Glasson, economist; born Troy, N. Y., July 26, 1874; graduated Troy High school, 1892; Cornell university, 1896; fellow political economy and finance, Cornell, 1896–7; Harrison fellow economics, University of Pennsylvania, 1897–8; fellow in administration, Columbia university, 1898–9; head department history and political science, George school, near Newtown, Pa., 1899–1902; professor political economy and social science, Trinity college, N. C. since 1902. Author: History of Military Pension Legislation in the United States, and numerous articles on the pension system of the United States.]

In attempting thirty five years ago to estimate the cost of the Civil war, one would scarcely have included an item of two and one half billion dollars for pensions. And yet, at the present time, that amount has been largely exceeded. The last widow of a Revolutionary soldier has not disappeared from the pension roll. Eighty eight years after the war of 1812, there was a survivor, and even now 1,500 widows of that war are in receipt of aid from the nation. Experience, then, abundantly justifies a belief that, a century after the close of the Civil war, we shall be making expenditures on account of that great conflict.

It is not safe even to assume that we have reached the maximum of pension disbursements on account of the Civil war. Congress may at some time yield to an agitation for a service pension law without the disability requirements of the act of 1890. This would be following existing precedents. In that case, the tendency to diminution in expenditures might be checked, and, for a time, there might be an increase. It would be interesting to know the entire cost of the Civil war in pensions and how many times the cost of hostilities in the field the amount will ultimately be.

That the pension system of the United States has not oftener been the subject of serious study is surprising. Through its agency, money goes from the national treasury into the pockets of one person in every seventy six of our population. Over a considerable period of years just prior to the war with Spain, about two dollars of every five expended by the national government went for pensions. When has any nation pro-

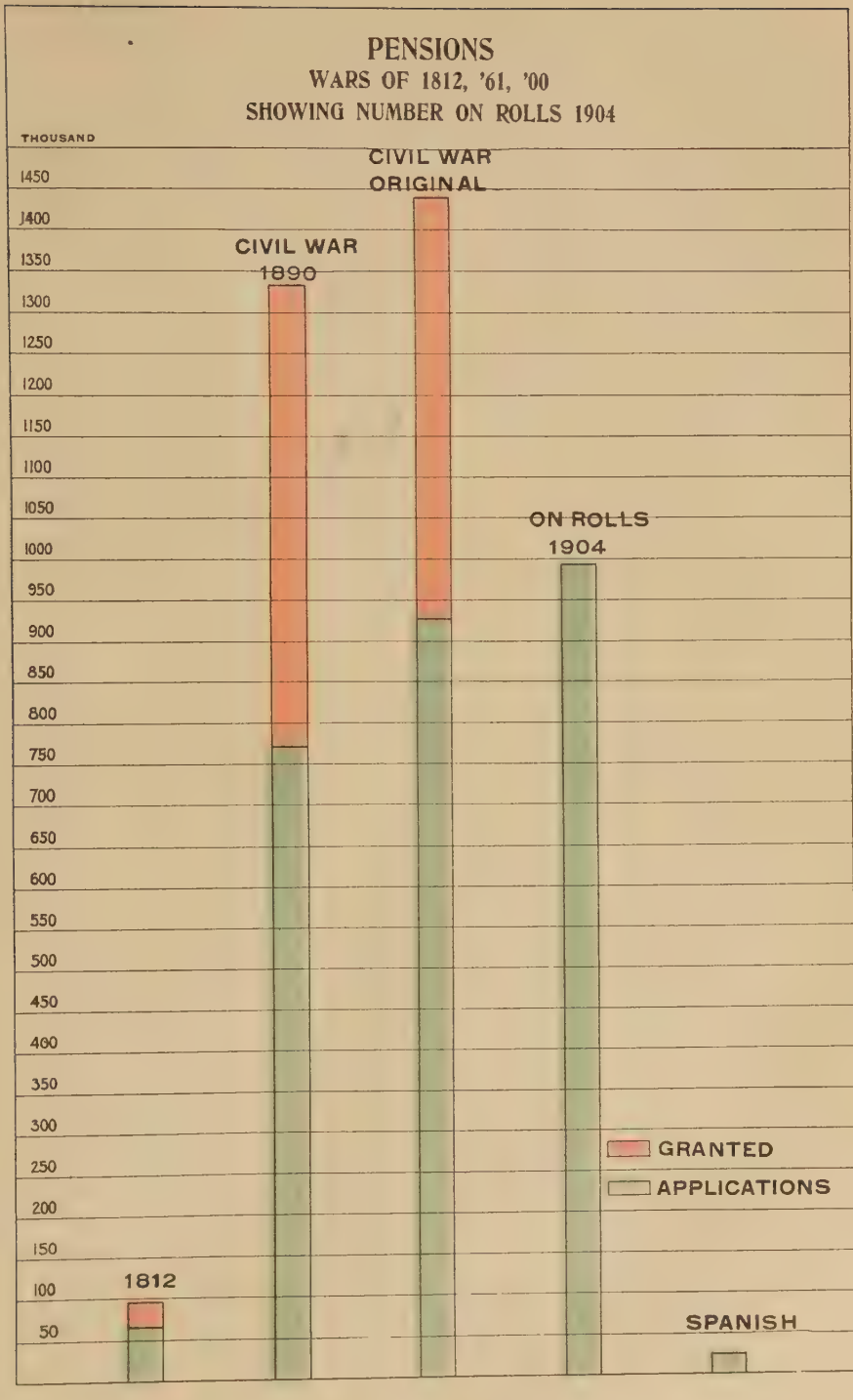
vided so liberally for its disabled soldiers and for the dependent relatives of the slain?

In the period from 1892 to 1897 inclusive, the entire receipts from internal revenue were $899,000,000 and the receipts from customs revenue $1,001,000,000. For the same period, the cost of pension payments and administration of the system was $880,000,000. This is 97.9 per cent of the total receipts of the government from internal revenue, or 87.9 per cent of the total custom receipts. These statistics seem suggestive of a connection between high tariff laws and lavish pension provisions. The interests of the protected manufacturer and of the pensioned soldier have been the same. Since the Civil war, there has been a noteworthy sequence in the passage of high tariff laws, the accumulation of a surplus, and the distribution of that surplus through pensions. It is doubtful whether the country would favor a $140,000,000 yearly appropriation for pensions, if that amount were to be added to the burdens of the internal revenue system.

The execution of a single pension law, that of June 27, 1890, has already cost over $700,000,000, and the expenditures under its provisions are piling up at the rate of between sixty and seventy millions a year. These figures are so large as to be appreciated with difficulty, and yet the demand for additional legislation is insatiable. Attempts by government officials to place ordinary safeguards upon the distribution of the public money are met by clamorous denunciation, and congress is importuned at every session for laws providing for even more lavish expenditures.

In the following pages, an attempt will be made to sketch in broad outline the main features of the present pension of the United States, especially as applied to military operations since 1861. Attention will also be given to some of the phases of legislation and administration which afford opportunity for the securing of assistance from the national treasury through claims without merit and often supported by fraud.

Though military pensions have been paid by the United States since early colonial times, the system has experienced a remarkable development since the Civil war. Prior to that time, rates were low, and, except in the case of Revolutionary


PENSIONS
WARS OF 1812, '61, '00
SHOWING NUMBER ON ROLLS 1904
THOUSAND
1450
1400
1350
1300
1250
1200
1150
1100
1050
1000
950
900
850
800
750
700
650
600
550
500
450
400
350
300
250
200
150
100
50
CIVIL WAR ORIGINAL
CIVIL WAR 1890
ON ROLLS 1904
1812
SPANISH
GRANTED
APPLICATIONS

soldiers, pensions were based upon disability received or death incurred as a direct result of military service. Laws were also carefully limited in operation to the particular wars concerned. At the outbreak of the Civil war, the pension list consisted of some 10,700 persons, of whom sixty three were soldiers of the Revolution, and 2,728 the widows of such soldiers. The actual expenditure during the fiscal year ending June 30, 1861, was $1,072,000. Under the laws then in force, the number of pensioners was decreasing at the rate of five or six hundred each year.

In the pension bureau, the wars fought before 1861 are known as the old wars. Provisions of so liberal a character have been enacted that practically all surviving soldiers and the widows of all who fought in these wars are pensioned.

With the exception of a grant of twelve dollars a month to the army nurses who served six months during the Civil war and are now unable to earn a support, the entire pension system of the United States, applying to military service after 1861, may be divided into two distinct parts: the general-law system and the system based upon the act of June 27, 1890.

The general law system is based upon a series of acts beginning with that of July 14, 1862, and extending down to the present time. It applies to all military service subsequent to March 4, 1861, and consequently to every war in which the United States may engage. Its basal principle is the granting of pensions on account of injuries received or disease contracted in actual military service and in the line of duty, or on account of death directly resulting from such service.

Pensions granted to soldiers under this system are in the strictest application of the term invalid or disability pensions. The rates established under the act of 1862, for total disability to perform manual labor, ranged from thirty dollars a month to a lieutenant colonel, or officer of higher grade, to eight dollars a month for a private soldier or sailor. This rating has been practically made obsolete by the passage of laws establishing fixed rates for certain specific disabilities. The first of these laws was that of July 4, 1864; and between that date and July 14, 1892, the law established fixed rates for about twenty specific disabilities. One hundred dollars per month is now

the highest rate, and is paid for the loss of both hands. A rate of seventy two dollars is paid for the loss of both feet or of the sight of both eyes. Other rates range down to twenty four dollars for a disability considered equivalent to the loss of a hand or a foot.

Besides the rates definitely fixed by law the commissioner of pensions, under authority of acts of March 3, 1873, and August 27, 1888, has himself fixed rates for some fifty other disabilities. Where the total rate does not exceed seventeen dollars a month, the rates for several minor disabilities may be added in fixing the amount of the pension. Thus the loss of a great toe, pensionable at six dollars a month, the loss of a little finger, at two dollars per month, and nearly total deafness of one ear, at six dollars per month, may under the law entitle an applicant to an allowance of fourteen dollars per month. However, if the total rate allowed should prove less than six dollars per month, the act of March 2, 1895, provides that from and after that date the rate shall be six dollars per month. Under the commissioner's ratings, the unfortunate loser of a little toe would be entitled to two dollars per month. But the before mentioned act increases the rate to six dollars a month, or seventy two dollars a year. So that, upon a 5 per cent basis, the United States might settle in cash for the toe by a payment of $1,440. The difference in invalid pension rates now and at the close of the Civil war is strikingly shown by the fact that then total disability was understood to be inability to perform manual labor, and was pensioned at eight dollars per month. The rate is now paid for so called simple total disability, and is the same as that for anchylosis (stiffening) of the wrist, loss of a thumb, or the loss of the great and second toes. The man who has lost a thumb is now entitled to the same amount as was paid, prior to June 6, 1866, for the loss of an arm or a leg. Inability to perform manual labor is now pensioned at thirty dollars per month, which is also the amount allowed for the loss of a hand or foot. The following table, compiled from the last report of the commissioner of pensions, shows the number of general law invalid pensioners grouped at each of eighteen typical rates. Every rate at which over one thousand pensioners are grouped is included.

Rate	Number	Rate	Number
$100	22	$20	4,447
72	2,011	17	39,100
50	1,173	16	10,998
45	2,078	15	2,261
36	2,491	14	22,326
30	15,206	12	44,441
25	2,404	10	26,846
24	22,665	8	41,619
22	2,652	6	50,438

More are pensioned at six dollars per month than at any other single rate. The injuries of these persons are considered less serious than the loss of a thumb, and it is not probable that they suffer any noticeable diminution in ability to earn a livelihood. The pensioners at eight dollars per month are hindered in their work to the extent of an amputated thumb or stiffened wrist. None of those pensioned at ten, twelve and fourteen dollars are suffering from an injury worse, in the opinion of the commissioner of pensions, than the loss of the middle, ring and little fingers of one hand. For he has fixed a rate of fourteen dollars per month for that injury. Those pensioned at thirty dollars have lost a hand or foot, or have suffered some disability deemed sufficient to render them unable to perform manual labor.

Widows' pensions, under the general law, are granted whenever the soldier dies by reason of injury received or disease contracted in service and in the line of duty. The widow is entitled to receive the total disability rate corresponding to the rank of her husband when he received the injury which resulted in his death. Her pension commences from the death of the husband and continues during widowhood. Under the act of 1862, rates ranged from eight to thirty dollars per month. The act of March 19, 1886, provided that the pension of the widow of a private or noncommissioned officer should be increased from eight to twelve dollars per month, provided she married the deceased soldier prior to the passage of the act, or thereafter prior to or during his term of service. From July 25, 1866, widows have also been entitled to an additional allowance of two dollars per month for each legitimate child

of the soldier under sixteen years of age, and in their care and custody. The general law does not inquire into the financial condition of a widow, but she must show that her husband's death was due to his service.

Before March 3, 1901, the remarriage of a widow finally terminated her title to a pension. By the terms of the act of that date, if she be the wife of a soldier during the period of his service in any war, her pension is terminated by her remarriage, but, if she again becomes a widow or be divorced upon her own application and without fault on her part, she may be restored to the roll. She must, however, present evidence that she is without means of support, other than her daily labor, and that she does not have an actual net income in excess of $250 a year.

In case a soldier is not survived by his wife, but by legitimate children under sixteen years of age, the children are entitled to the same pension as the widow might have received. Such children also succeed to a pension in cases where for some reason the right of the widow is terminated. Pensions to minors cease when they severally attain the age of sixteen years. In case a minor child becomes insane, idiotic or permanently helpless before it attains that age, the pension continues during the life of the child or during the period of the disability.

When a soldier leaves no widow or minor children, provisions are made, under certain restrictions, for the succession to the pension of the dependent mother, the dependent father, or of the orphan brothers and sisters under sixteen years of age, jointly. The law established the right of succession in that order. Rates of pensions to dependent relatives are fixed according to rank, just as with widows, but since March 19, 1866, the minimum rate is twelve dollars per month.

Not including war with Spain pensioners, the number of invalids pensioned under the general law is 297,675, and the number of pensions to widows and dependent relatives is 88,802. The amount paid to these pensioners during the fiscal year 1901 was $67,867,233.84. Since July 1, 1861, 880,585 original invalid claims have been filed under the general law, and 587,647 have been allowed. Out of 542,284 claims of

widows and dependent relatives filed, there have been allowed 335,273. Very few applications based upon service in the Civil war are now presented under the general law. Down to June 27, 1890, the general law system was the only provision for pension allowances, with the exception of the service laws passed on behalf of the old wars.

Though many abuses, extravagancies and incongruities have crept into our present laws, a properly guarded invalid pension system is in conformity with good public policy. Its value has repeatedly been recognized as a means of encouraging enlistments. So long as nations continue to settle their disputes through warfare, public opinion will hold governments to the duty of properly providing for the care of the unfortunate victims of the battle field. Where injuries have been severe, pensions should be liberal. Aid to widows, orphans and dependent relatives merits general approval, when the head of the family has lost his life as a result of his service. A conservative rule, however, would exclude from the benefits of the pension laws the widow who has married the soldier at a period long after the termination of his service.

The act of June 27, 1890, established a system of pensions for the benefit of those who served ninety days or more in the army or navy of the United States during the Civil war and were honorably discharged, and for their widows and minor children. The above requirement is supplemented by certain important conditions not connected with the service. In its operation, this system, unlike that under the general law, is restricted to the particular war concerned.

The soldier who applies for an allowance must have performed the required term of service and must be suffering from some mental or physical disability of a permanent character, not the result of his own vicious habits, which renders him unable to earn a support by manual labor. Rates range from six to twelve dollars per month, proportioned to the degree of disability to earn a support. No requirement is made that the applicant's disability shall have any connection with military service, and the act of May 9, 1900, provides that, in determining inability to earn a support, each and every infirmity shall be duly considered, and the aggregate of the dis-

abilities shown be rated. The amount of the pension is determined by the degree to which all these infirmities, whether minor or serious when considered together, render the applicant unable to earn a support by manual labor. Six dollars per month is the rate for any material impairment of such ability. For total, or nearly total inability to perform manual labor the allowance is twelve dollars. Intermediate rates of eight and ten dollars per month have also been established. A degree of disability that would entitle a claimant to the thirty dollar rate under the general law is pensioned under this act at twelve dollars per month.

Some of the disabilities which are ratable under the general law do not constitute a valid claim under the act of 1890, because they do not materially interfere with the performance of manual labor. For instance, deafness of one ear is not pensionable. Though the age of a claimant is not considered in fixing the rate of pension under the general law, it is an important factor under the act of 1890. A claimant who has reached the age of seventy five years is allowed the maximum rate for senility alone, and at least the minimum rate is usually granted to one who has attained the age of sixty five years.

There are 438,114 persons pensioned under this system for disabilities not of service origin. Of these 100,258 receive six dollars a month, 133,327 eight dollars, 37,055 ten dollars, and 151,572 twelve dollars per month through special acts of congress.

The widow of any person who served ninety days or more during the Civil war and was honorably discharged, if without other means of support than her daily labor, is entitled to a pension of eight dollars per month. She is not required to show that her husband's death was the result of his service in the army, but she must have married him prior to June 27, 1890. The act of May 9, 1900, provides that the widow may be pensioned if without other means of support than her daily labor, and an actual net income not exceeding $250 a year. Pensions to widows begin from the date of the application and continue during widowhood. The additional pension of two dollars per month for each of the children of a deceased soldier, under sixteen years of age, is paid to the widow under the same conditions as provided by the general law.

In case the soldier leaves no widow, or her right to a pension is terminated by death or remarriage, the children under sixteen years of age receive the same pension as the widow would receive if living or eligible. Pensions to minor children who become insane, idiotic or permanently helpless are governed by the same rule as under the general law. Children of a marriage which took place subsequent to June 27, 1890, are not entitled to a pension under this act. The act of 1890 also makes additional and more liberal provisions for the pensioning of dependent parents. There are now 145,011 widows, children and dependent relatives pensioned under this system.

The following table shows the great predominance upon the roll of pensioners under this law:

	Invalids.	Widows, Children, etc.
Act of June 27, 1890,	438,114	145,111
General law,	297,675	88,802
War with Spain,	3,555	2,049
War with Mexico,	7,568	8,109
Indian wars, 1832–42,	1,086	3,479
War of 1812,	1	1,527
Revolutionary war,		9
Nurses (Civil war)		650
	747,999	249,736

Out of 997,735 persons on the pension list of the United States, 583,225, or over 58 per cent, are pensioned under the act of 1890. The war with Spain pensioners, as given in the foregoing table, are included under the general law, but are classified separately by the pension bureau. Up to the end of the fiscal year 1901 there had been 861,076 invalid claims filed under the act of 1890 and 470,850 allowed, and 357,752 widows' claims filed, with 197,872 allowed. There is an almost constant decrease in the number of Civil war claims annually admitted under the general law. Though the rates under the act of 1890 are lower, its terms are less restricted and proof is more easily furnished. Frequently claims are filed under both systems. The pension under the act of 1890 is more easily secured, but if sufficient proof can be advanced to secure the

allowance of a general law claim at a higher rate, the former pension is surrendered.

The act of 1890 is the most extravagant pension law ever enacted and the most vulnerable point in our pension system. In 1887, President Cleveland courageously vetoed a similar law. He also made a record by his vetoes of unworthy special pension acts. The republican national platform of 1888 denounced the hostile spirit shown by President Cleveland in his numerous vetoes of measures for pension relief, and, in the presence of an overflowing treasury, advocated the extension of pension legislation so as to provide against the possibility that any man who honorably wore the federal uniform should become an inmate of an almshouse or dependent upon private charity. The Grand Army of the Republic, at Columbus, Ohio, in September 1888, adopted resolutions asking for service pensions to all who served sixty days or more in the Civil war, at the rate of eight dollars per month, and to all who served a period exceeding eight hundred days, an additional amount of one cent per day for each day's service exceeding that period. In the presidential campaign of 1888 the pension question was in some localities a very important issue. The republican candidate for governor of the doubtful state of Indiana was General A. P. Hovey, president of the service pension association of the United States. Indiana was carried by the republican party.

After the inauguration of the new administration there was a concerted movement throughout the country for a service pension law. The Grand Army of the Republic and the pension attorneys were very active in urging the matter upon the attention of congress. It was the desire of the republican leaders to satisfy this demand without going to the extreme of a simple service pension bill. Consequently, the act of June 27, 1890, was passed.

It was similar to the dependent pension bill vetoed by President Cleveland, except that it provided for the grading of the pension according to the degree of disability. In the house, the advocates of the measure estimated its cost at $25,000,000 per annum, and in the senate, at not to exceed $41,000,000 per annum. The law costs about $25,000,000

annually more than the highest estimate of its supporters.

Under this system, the rich may be pensioned alike with the poor. If the medical examination shows that the claimant is wholly or partially unable to perform manual labor, there is no further inquiry into his ability to support himself. He may be a professional or business man in receipt of a large income, he may be the owner of valuable real estate or securities, but the law takes no cognizance of these facts. If he served ninety days during the Civil war and the medical examiners certify that he is unable to perform manual labor, he will receive his $144 a year.

The claimant may never have been engaged in active service. His ailments or injuries may have no possible connection with life in the army. His property and income may be quite adequate for the support of himself and family. But the law gives him a clear title to a pension, and, if he yields to the solicitations of some fee-seeking attorney, his name will soon be on the pension roll.

A concrete illustration will throw further light upon the operation of the act. Suppose a lawyer to be crossing a crowded thoroughfare in one of our cities. He is struck by an electric car and receives an injury necessitating the amputation of his foot. If he completed three months' service during the Civil war he has a clear title to a pension of twelve dollars a month for life. But what justice is there in the provision of law which grants him the pension? Beyond the temporary interference with his work, his professional income may not be at all diminished. He may even recover heavy damages from the street railway company. For such a man, the law of 1890 is practically an insurance provision against accident or illness which may result in permanent disability.

Why should one class of men in this country be taxed to make provision of this kind for another class of men? The only possible answer is that the latter class served in the Civil war. It is difficult to believe that reasons of sound public policy can be at the basis of such legislation. It is easier to think that in the presence of an overflowing treasury, congress was unable to resist the pressure of pension attorneys and soldier organizations for a distribution of the surplus.

In the illustration we have taken, the applicant has a clear legal title. No dishonesty or misrepresentation would be necessary to secure the allowance of his claim, however little merit there might be in it. But, in that large class of cases where the disabilities alleged are obscure and not apparent to other than medical experts, what a field for simulation and fraud! The eager persuasions of attorneys, the fact that less worthy comrades are receiving pensions, the great resources of the national treasury, induce many honest men, seemingly in normal health, to discover in themselves ailments which would have been little noticed but for the pension laws. In every large community may be found pensioners under this act, who are daily earning a living by manual labor, and seem to be under no disadvantage as compared with other workers of the same age and condition in life.

It is not a pleasant task to object to pensions to widows and fatherless children. But there seems to be no good reason why the national government should pension a widow who married a soldier twenty or twenty five years after his period of service, when his death can not be attributed in any way to that service. She is no more worthy of a pension than any other widow. Yet the act of 1890 grants pensions in just such cases, and, as amended in May, 1900, pensions the widow even when her net annual income amounts to $250, apart from any thing she may earn by her daily labor.

This system does not provide a national gratuity or dignified form of poor relief for indigent and infirm veterans, for it makes no inquiry regarding the soldier's property or income. It pensions alike rich and poor, prosperous and unprosperous. It is not a reward for long and meritorious service in the army, for it places the three months' man upon the same basis as the soldier who fought through the whole war. Nor is it a compensation for injuries and disease contracted in the camp and on the battle field, for it pensions for all disabilities, whenever incurred, except those resulting from vicious habits. It is unsound in principle, loose in expression and frequently absurd in application. Taxpayers are required to bear an extravagant and unjust burden to insure a privileged class against serious accident or disability. Such a system stimulates dis-

honesty and dependence, fails to prevent the pension list from being as it should be, a roll of honor. Though there is little hope of its being changed at the present date, the history of its operation should serve as a warning when propositions for unlimited service pension laws are broached in congress. With the restoration of a treasury surplus, such measures are certain to be persistently urged.

No soldiers have ever enjoyed the benefit of pension provisions so liberal as those applying to our forces engaged in the war with Spain and in suppressing the insurrection in the Philippine islands. The whole body of the general pension law, enacted from the Civil war down to the present time, applies to these soldiers just as it does to the veterans of the struggle of 1861-1865. No additional legislation has been needed. For the soldiers of the Civil war the system was gradually established and liberalized. For those of the war with Spain it is in effect immediately at discharge.

Up to March 2, 1895, thirty years after the close of hostilities, many thousands of soldiers of the Civil war were pensioned at rates of two and four dollars per month. On June 30, 1890, there were on the rolls 95,835 invalid pensioners of that war at rates less than six dollars per month. Of these 21,232 received but two dollars per month, and 71,789 were pensioned at four dollars per month. No pensioner of the war with Spain can receive less than six dollars per month. That rate will be allowed for so slight an injury as the loss of a little finger. Other comparisons of rates are instructive. The rate for the loss of a hand or foot, which was eight dollars in 1865 and fifteen dollars in 1866, was raised to eighteen dollars in 1872, twenty four dollars in 1883, and has been, since 1888, thirty dollars. In 1865, a soldier who had lost an arm at the shoulder joint or a leg at the hip joint could receive only eight dollars per month; in 1898, the same disability was pensioned at forty five dollars per month. Prior to 1872, the loss of both hands was pensioned at twenty five dollars per month; the rate is now one hundred dollars. The loss of the sight of both eyes is now pensioned at seventy two dollars as compared with twenty five dollars in 1872. The highest rates for all injuries and disabilities of service origin are applicable to the soldiers

of the Spanish-American war. Total deafness of one ear entitles them to a higher allowance than was provided for entire disability to perform manual labor at the close of the Civil war. The system under the act of 1890 is not, however, applicable to those engaged in the recent hostilities.

Though war with Spain pensions are granted under the provisions of the general law, the pension bureau has classified them separately. All claims for disabilities contracted in the service since April 21, 1898, both in the volunteer and regular army and in the navy, are being charged to the account of the war with Spain. No date has yet been fixed as the termination of this war for pensionable purposes, and all claims that are filed come under that classification, provided the disability was incurred since April 21, 1898, and without regard to the location of the command at the time the disability was incurred. It follows then that those who have received, or may hereafter receive, pensions on account of injuries in putting down the Philippine insurrection after the ratification of the treaty of peace with Spain are classified as war with Spain pensioners.

An interesting comparison of the average annual value of each pension on the roll, each general law pension, each act of 1890 pension and each Spanish war pension is made in the following table:

AVERAGE ANNUAL VALUE

Year	Each pension	Each general law pension	Each Act of June 27, 1890, pension	Each Spanish war pension
1894	$134 20	$155 08	$115 12	
1895	133 99	158 39	112 15	
1896	133 39	161 05	109 55	
1897	133 17	162 04	109 25	
1898	131 79	163 21	108 11	
1899	132 74	165 70	108 99	$196 53
1900	132 39	167 53	108 28	169 10
1901	131 87	168 67	108 09	153 50

The high annual value of Spanish war pensions in 1899

was due to the fact that the first allowances were made to those who were suffering from pronounced disabilities of a severe nature. Later on, pensions were granted to applicants whose disabilities were less serious in character. In many cases, claimants were accorded the benefit of the doubt as to the existence of a pensionable disability where the disabled state was due to sickness rather than to permanent injuries. The decrease is also largely due to the fact that, with a return to favorable surroundings, the physical condition of most of those who served in this war is constantly improving.

The commissioner of pensions has said that many of these pensioners will be ordered for re-examination at stated periods, and that when the disability shall have ceased to exist in a pensionable degree, the pensions must stop in accordance with the law.

There was a striking difference between the Civil war and the war with Spain. The former lasted four years and was characterized by desperate fighting and unprecedented casualties upon the battle field, in addition to an enormous number of deaths from disease in camp and prison. The war department estimates that, at one time or another, a total of 2,213-365 men served in the union army. On the contrary, the war with Spain was short and characterized by few direct casualties from shot and shell. Very serious injuries, however, resulted from disease incident to camp life and exposure to unusual climatic conditions. Within one hundred days from the declaration of war, Spain was seeking peace, and the average term of service was only about six months. About 223,000 volunteer troops were called into service during the war. Since the treaty of peace, another volunteer army of over 39,000 officers and men has been used in our new possessions, and on June, 30, 1901, the regular army had reached a strength of 81,586 officers and men.

In 1872, Commissioner of Pensions Baker reported that about six per cent of the union soldiers had filed claims for impaired health or disability resulting from their service. In the valuable discussion of Spanish war pensions in his last report, Commissioner of Pensions Evans said that already claims amounting in number to about twenty per cent of the men enlisted for the Spanish war have been filed. This fact

he attributes to the importunities and persuasions of an army of attorneys, solicitors and drummers, who are eagerly seeking applications with the view of securing the twenty five dollar fee legally collectible for each claim allowed. He cites the case of a regiment which had a membership of fifty three commissioned officers and 937 enlisted men. It suffered no battle field casualties and but one officer and twenty two men died of disease while in service. There have already been filed 477 claims for pensions on account of service in this organization for disabilities alleged to have been contracted during the brief term of its existence.

Under the system adopted by the war department each volunteer soldier, upon his muster out, was required to state over his own signature whether he was then suffering from any disabilities. The great majority of volunteers stated that they had no disabilities. In this statement they were corroborated by the certificate of the commanding officer of each company and by that of an army surgeon, who was required to make a physical examination of each soldier mustered out. Yet thousands of applications for pensions have been filed on behalf of these identical men in which are set forth in great detail the dates and circumstances of origin of a number of disabilities incurred in service, with a statement that they have continued ever since. The names of the disabilities were usually suggested to the claimants by enterprising solicitors. In some cases, forty eight hours before executing his declaration for a pension, the claimant declared over his own signature that he had no disability of any kind; the commanding officer confirmed the declaration, and the surgeon examined the soldier and certified that he had no disability.

In gaining an adequate conception of the importance of our pension system, the following statistical information will be of value:

Paid for army pensions since July 1, 1865,	$2,608,004,258.63
Paid for navy pensions since July 1, 1865,	58,900,330.60
Fees of examining surgeons,	17,375,192.13
Cost of disbursement and agencies,	13,140,883.73
Pension bureau, salaries,	48,696,646.50
Pension bureau, other expenses,	8,610,616.60
Total,	2,754,727,928.19

The outstanding principal of the public debt of the United States was, when at its highest point, in 1866, $2,773,000,000. The pension expenditures since the Civil war have already reached that amount, and are continuing at the rate of $140,000,000 per year. The comparative importance of pension disbursements before and after the Civil war is shown by the fact that the amount expended from July 1, 1790 to June 30, 1865, was but $96,445,000.

Within the space assigned to the present paper, it has been impossible to make more than passing comment upon the administrative evils of the pension system. Billions of dollars have been paid from the national treasury under methods which would not be tolerated in any business enterprise in the world. However well disposed the officers of the pension bureau may be, it is not now possible for them to render justice to claimants and to safeguard the interests of the government. In some of its aspects, the present system seems well adapted to facilitate fraud rather than to check it. The truth of these statements is abundantly attested by the published reports of a long succession of commissioners of pensions. In his last report, Commissioner Evans expresses emphatic concurrence in the protests of his predecessors against the wrongs of the system with whose administration they were charged. He makes a most earnest plea for reform, but the influences opposed to a business-like administration of the pension bureau are so strong at Washington that there is little hope that congress will authorize any change for the better.